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THE FIFTY-SEVENTH

Annual Report

UPON THE

HEALTH OF LEICESTER,

FOR THE YEAR

1905,

INCLUDING

THE CHIEF INSPECTOR'S REPORT,

THE ISOLATION HOSPITAL REPORT,

AND

THE PUBLIC ANALYST'S REPORT.

BY

C. KILLICK MILLARD, M.D., D.Sc.,

*Medical Officer of Health; Medical Superintendent of the Borough
Isolation Hospitals; Public Analyst for the Borough.*

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The Committee meet every Friday in the Committee Room,
Town Hall, at 3-30 in the Afternoon.

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SUMMARY OF STATISTICS

FOR THE YEAR 1905.


Population (estimated) at Mid-year	228,132
Population at Census, 1901, 211,581.			
Marriages	...	...	1,886
Marriage-rate	..	...	16.53
Births...	...	...	5,888
Birth-rate (lowest on record)	..	..	25.81
Deaths	...	...	3,062
Death-rate (lowest on record)	...	...	13.42
Average for previous 10 years, 16.44.			
Death-rate, corrected for Age and Sex (to compare with other towns), 11.33.			
Infant Mortality (per 1000 births)...	...	...	146.5
Average for previous 10 years, 182.3.			
Zymotic-rate	...	...	1.64
Average for previous 10 years, 2.57.			
Diarrhœa-rate	...	...	.92
Phthisis-rate	...	...	1.26

76 LARGE TOWNS.

Average Death-rate	in 1905	...	15.7
„ Zymotic Death-rate	„ „	...	1.88
„ Infant Mortality	„ „	...	140

Area of Borough (in acres)	...	8,586
Rateable value (1st October, 1905)...	...	£1,070,828
Penny in £ produced	...	£3,967
Number of persons per Acre at Census, 1901	...	24.6
„ „ per House	„ „	4.6
„ „ Inhabited Houses, end of June, 1905	...	49,348

Borough extended year 1891.



TOWN HALL, LEICESTER.

March, 1906.

To the Chairman and Members of the Sanitary Committee.

Gentlemen.

I have the honour to present to you my fifth Annual Report, viz., that for the year 1905. I am glad to say that the death-rate was very satisfactory, being only 1.342 per 1000 of the population, which is the lowest figure hitherto recorded. Leicester continues to hold a very favourable position from a health point of view compared with other large industrial centres, only two of the other Great Towns having a lower death-rate for 1905.

Infant Mortality was also lower than usual, being only 146.5 as compared with an average of 182.3 for the previous ten years. This was largely due to the fact that the annual epidemic of Infantile Diarrhoea was less fatal than usual, in spite of the fact that the summer of last year was a hot and dry one.

The Zymotic rate was only 1.64 compared with an average of 2.57 in the previous ten years.

It is probable that the population of the Borough is slightly over-estimated, but I do not think that the excess, if any, is sufficient to materially affect our statistics.

I am giving some figures showing the number of persons of either sex employed in the principal trades of the town. From these it appears that whilst the proportion of females employed in the Hosiery trade and the Boot and Shoe trade is increasing, the proportion of males is increasing in other trades. The displacement of men by women, therefore, in our two staple industries is fully compensated for.

I have gone more fully than in previous years into the statistics of the Municipal Wards, and for the first time I am able to give the birth-rates and infant mortality rates in each ward. The contrast between some of the wards is very striking and regrettable. Newton Ward again has the highest death-rate, and it also has the highest birth-rate and the highest infant death-rate. Speaking generally, the wards with high birth-rates have also high infant death-rates and vice-versa.

As regards infectious diseases, I am pleased to say that Smallpox, in contrast with the two previous years, has been practically absent from the Borough. Only five cases occurred, all believed to have been imported, and there were no deaths. There has also been comparatively little Diphtheria or Enteric Fever. The position of the town as regards the latter disease has been very satisfactory for some years past.

On the other hand, Scarlet Fever was unusually prevalent throughout almost the whole of the year, and the epidemic still continues. Fortunately it was not of a very severe type, the number of cases reported being 1117, and the number of deaths 36.

Owing to the prevalence of Scarlet Fever the Isolation Hospital was severely taxed, and the total number of patients treated there for various diseases was 1037.

I have devoted considerable space to the consideration of Phthisis. I am glad to say that the number of deaths (288) caused by it was substantially less than in the previous year, but it was still deplorably high. In order to prevent misconception, I would point out that Phthisis is not worse in Leicester than the average for large manufacturing towns, but the rate is high in comparison with the low general death-rate of the town. The figures I adduce show that the Phthisis rate is higher in the Boot and Shoe trade than in other trades.

The subject of Municipal Infants' Milk Depôts has engaged considerable attention during the year, and you have decided to start a Depôt in Leicester during the coming Summer.

Dr. Allan Warner, who for several years has acted as Assistant Medical Officer of Health and Resident Medical Officer at the Isolation Hospital, having been appointed Medical Officer to the Education Authority, his place at the Isolation Hospital has been taken by Mr. John Lambie, M.B., D.P.H.

My best thanks are due to Chief Inspector Braley and all the members of the Sanitary and Hospital Staffs for loyal help and assistance, and to the members of the Sanitary Committee for their courtesy and consideration.

I am, Gentlemen,

Your obedient Servant,

C. Killick Millard

Medical Officer of Health

MEDICAL OFFICER'S REPORT,

1905.

PART I.

STATISTICAL.

POPULATION.

The population of the Borough for the year 1905, as estimated by the Registrar General's method, was **228,132**, and it is upon this figure that our mortality statistics are calculated.

This estimate is based upon the assumption that the rate of increase of population in the Borough during the present intercensal period is the same as that which occurred during the last intercensal period. Owing to the recent spell of bad trade,* however, it is possible that this assumption is not correct, and that the present rate of increase is not so great as it formerly was. It is worth considering, therefore, to what extent, if at all, the Registrar General's estimate is too high.

The population of Leicester at the middle of the last census year was 212,498. The "natural" increase since then, or excess

* The influence of the recent spell of bad trade is shown by the following figures :—

In 1901 the number of Burgesses was 40,284					
In 1904	..	..	..	41,297
In 1905	..	..	..	41,230
		Empty Houses.	Empty. Cottages.	Empty Warehouses.	Empty Offices.
January 1905	...	672	2004	151	48
January 1906	...	843	2162	160	108

of births over deaths, amounts to 11,640. This would bring the population to 224,138 if we ignore the influence of immigration, but it is almost certain that in a large and growing industrial centre this will be considerable.

A safer way of arriving at the population is to calculate it from the number of inhabited houses. At the end of June, 1905, the number of inhabited houses in the Borough was 49,348. If we assume that the number of persons per inhabited house is the same as found at the last census—viz., 4·6—we get 227,001, which is only 1131 less than the Registrar General's estimate. This difference is so small that it would only affect the death-rate in the second decimal place.

THE PRINCIPAL INDUSTRIES OF LEICESTER.

The two staple industries of Leicester, as is well known, are the Hosiery trade (the original industry of Leicester) and the Boot and Shoe trade, the latter being a more modern introduction, to the rapid growth and development of which the prosperity of modern Leicester is largely due.

The Boot and Shoe trade is growing much faster than the Hosiery trade, and already employs more than twice as many hands.

The Hosiery trade is chiefly a women's trade, and, speaking generally, employs about twice as many women as men. This proportion is increasing, and is now nearly three to one; whilst the Boot and Shoe trade is chiefly a men's trade, and employs about twice as many men as women.

As it is important to consider the possible bearing of industrial occupation upon the health of a community, I have thought it desirable to get out the following tables, showing the number of persons found to be employed in these two trades at the last two census enumerations. Elsewhere in this Report will be found tables (see List of Tables) showing the number of persons employed in various other occupations.

The conclusions to be drawn from the above figures may be summarised as follows:—

The Hosiery Trade, as judged by the number of "hands" employed, is not increasing in proportion to the growth of the town. The actual number of persons employed in it is almost exactly the same as it was 10 years before, but the percentage of the total population employed in it is distinctly less (only 7·5 per cent. against 9·3 per cent.) Moreover, a change is taking place in the proportion of females employed. In 1891 there were 200 females to every 100 males employed, but in 1901 the ratio had risen to 277 females to every 100 males.

The Boot Trade, on the other hand, is increasing. Not only is the actual number of persons employed in it greater (26,561 against 24,159), but the percentage of the total population thus employed has increased from 18·2 per cent. to 19·5 per cent. (Table B.)

In this trade also a change is taking place in the proportion of females employed. In 1891 there were 43 females to 100 males. In 1901 the proportion had risen to 49.

Taking the Boot trade and Hosiery trade together we find that the number of males employed in 1901 was only 100 more than in 1891, whilst the number of females employed had increased by no less than 2,320.

As a set-off against this, however, there is a substantial increase in the number of males employed in other trades, the percentage of the male population employed in "all other trades" having risen from 51·9 to 58·9. Simultaneously, the proportion of females in these trades has decreased, the ratio in 1891 being 59 females to 100 males, whilst in 1901 it was only 53. Thus, during the ten years, the number of males employed in "all other trades" increased by 12,856, whilst the number of females increased by only 4,627. We see, therefore, that whilst men have been displaced by women in the two staple industries of the town, men have to an even greater extent displaced women in other trades. Thus, comparing 1901 with 1891, the total of occupied males has slightly increased, having risen from 85·8 to 86·5 per cent., whilst the percentage of occupied females has decreased from 48·7 to 46·4. The same result is seen if we examine the class "Unoccupied or Retired." Here we find a slight decrease

in the proportion of males, and an increase in the proportion of females.

This is contrary, I think, to what many people believe—*viz.*, that the proportion of females going to work in Leicester is increasing, and that they are displacing the males. The above figures, taken from the census returns, prove that whilst this is true of the Hosiery and Boot trades, it is not true of the industries of the town as a whole.

TABLE A.
NUMBER OF PERSONS OVER TEN YEARS OF AGE ENGAGED IN CERTAIN OCCUPATIONS.

CENSUS.	Hosiery Trade.		Boot Trade.			All Other Trades.		
	Males.	Females.	M. and F.	Males.	Females.	M. and F.	Males.	Females.
1891	4,113	8,258	12,371	16,839	7,320	24,159	32,071	18,910
1901	3,282	9,107	12,389	17,770	8,791	26,561	44,927	23,537

TABLE A.—Continued.

CENSUS.	Total Occupied Persons.			Unoccupied or Retired.			Total Occupied and Unoccupied.		
	Males.	Females.	M. and F.	Males.	Females.	M. and F.	Males.	Females.	M. and F.
1891	53,023	34,488	87,511	8,715	36,318	45,033	61,738	70,806	132,544
1901	65,979	41,435	107,414	10,270	47,756	58,026	76,249	89,191	165,440

TABLE B.

PERCENTAGE OF TOTAL POPULATION OVER TEN YEARS OF AGE ENGAGED IN CERTAIN OCCUPATIONS.

CENSUS.	Hosiery Trade.			Boot Trade.			All Other Trades.			Total Occupied Persons.			Unoccupied or Retired.		
	M.	F.	M. & F.	M.	F.	M. & F.	M.	F.	M. & F.	M.	F.	M. & F.	M.	F.	M. & F.
1891	6.6	11.6	9.3	27.2	10.3	18.2	51.9	26.7	38.4	85.8	48.7	66.0	14.1	51.2	33.9
1901	4.3	10.2	7.5	23.3	9.8	19.5	58.9	26.3	41.3	86.5	46.4	64.9	13.4	53.5	35.0

TABLE C.

RATIO OF OCCUPIED MALES TO OCCUPIED FEMALES.

CENSUS.	Hosiery Trade.		Boot and Shoe Trade.		All Other Trades.		Total Occupied Persons.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1891	190	to 200	100	to 43	100	to 59	100	to 65
1901	100	to 277	100	to 49	100	to 53	100	to 63

MARRIAGES.

The number of marriages solemnised in the Borough during the year was 1886, equal to a marriage-rate of 16·53 as compared with 16·46 in 1904.

MARRIAGES.

First Quarter	...	...	...	270
Second Quarter	...	...	...	564
Third Quarter	...	...	...	544
Fourth Quarter	...	...	...	508

BIRTHS.

The number of births registered during the year was 5888, of which 3052 were males and 2836 were females.

This number is 93 less than in the previous year, and is the smallest number since the year 1895, when, of course, the population was considerably less.

The *Birth-rate* was **25·81** per 1000 population, and is the lowest rate hitherto recorded.

Owing to the continued fall in the birth-rate, the actual number of children born each year in Leicester is, in spite of the increasing population, beginning to decrease.

The births and birth-rates for the past ten years have been as follows :—

Year.	Births.	Birth-rate.
1896	6212	32·00
1897	6252	31·63
1898	6152	30·56
1899	6273	30·61
1900	6207	29·75
1901	6169	29·03
1902	6313	29·17
1903	6018	27·31
1904	5981	26·67
1905	5888	25·81

Fortunately, the reduced number of births is to a very large extent compensated by the reduction in mortality, and especially in infant mortality—fewer infants are born, but fewer die. Moreover, amongst the “better classes” with whom the birth-rate is lowest, the rate of infant mortality is also lowest. At the same time, it would be a mistake to assume that there is necessarily any causal relationship between a high birth-rate and a high infant mortality merely because the two things—or their converse—often go together. (See further remarks on this topic under Ward Statistics).

In this connection it is a noteworthy and important fact that the birth-rate is steadily declining in practically all civilised countries.

Illegitimate Births.—The number of illegitimate births was 274, equal to 4.6 per cent. of the total births.

DEATHS.

The total number of deaths registered in the Borough, after correcting for Public Institutions,* was **3062**, of which 1541 were of males and 1521 of females.

The *Death-rate* was **13.42** per 1,000, being the lowest on record. The previous lowest was in the year 1903, when it was 13.91.

This result is all the more gratifying in that last summer was both hot and dry and, therefore, conducive to a high infant mortality.

It must be very gratifying to those who for many years have been connected with the Sanitary Committee, or with the Highway and Sewerage Committee of the Corporation, to compare the present low rate of mortality in the Borough with the rates which used to prevail twenty or thirty years ago. During the past generation an immense improvement in the sanitary

* 62 deaths of inmates of the County Asylum and 69 inmates of the Leicester Infirmary, not being residents of Leicester, have been deducted; whilst 33 deaths of residents of Leicester at the Borough Isolation Hospital, and 42 deaths at the Workhouse Infirmary at North Evington have been included, these two last-named institutions being outside the Borough.

condition of the town has been effected, and this has been followed by, and no doubt has largely contributed to, the greatly reduced mortality.

At the same time it is right to bear in mind that a general improvement in the death-rate has taken place all over the country, which is no doubt the result of the improved social conditions under which the working classes now live. Cheaper food, cheaper clothes, cheaper necessities of all kinds, with shorter hours and better conditions of labour, have done very much towards lengthening the life of the workers. There is reason, too, to think that further improvements in this direction will still further increase the expectation of life, and proportionately lower the death-rate.

VITAL STATISTICS OF OTHER GREAT TOWNS.

In Table V. will be found the vital statistics of the principal Great Towns of England and Wales for 1905. Leicester again occupies a very favourable position, only two of the other great towns showing a lower death-rate—*viz.*, Croydon and Brighton, whilst a third town, Derby, makes a "tie." For some years now Brighton, Croydon, Leicester, and Derby have generally been amongst the half-dozen great towns with the lowest death-rates.

Of course, if instead of restricting the comparison to the "33 Great Towns"—all of which have populations of over 100,000—we take the "76 Great Towns," which include towns with populations over 50,000, there would be many towns with death-rates lower than Leicester. It would obviously be unfair, however, to compare a great industrial centre like Leicester, with a population of over 225,000, with towns not a quarter the size, and amongst which are included such places as Bournemouth, Hastings, Yarmouth, Hornsey, etc. But in spite of this, as will be seen from Table V(A), last year Leicester's death-rate was well below the *average* for even the "76 Great Towns."

CAUSES OF DEATHS DURING 1905.

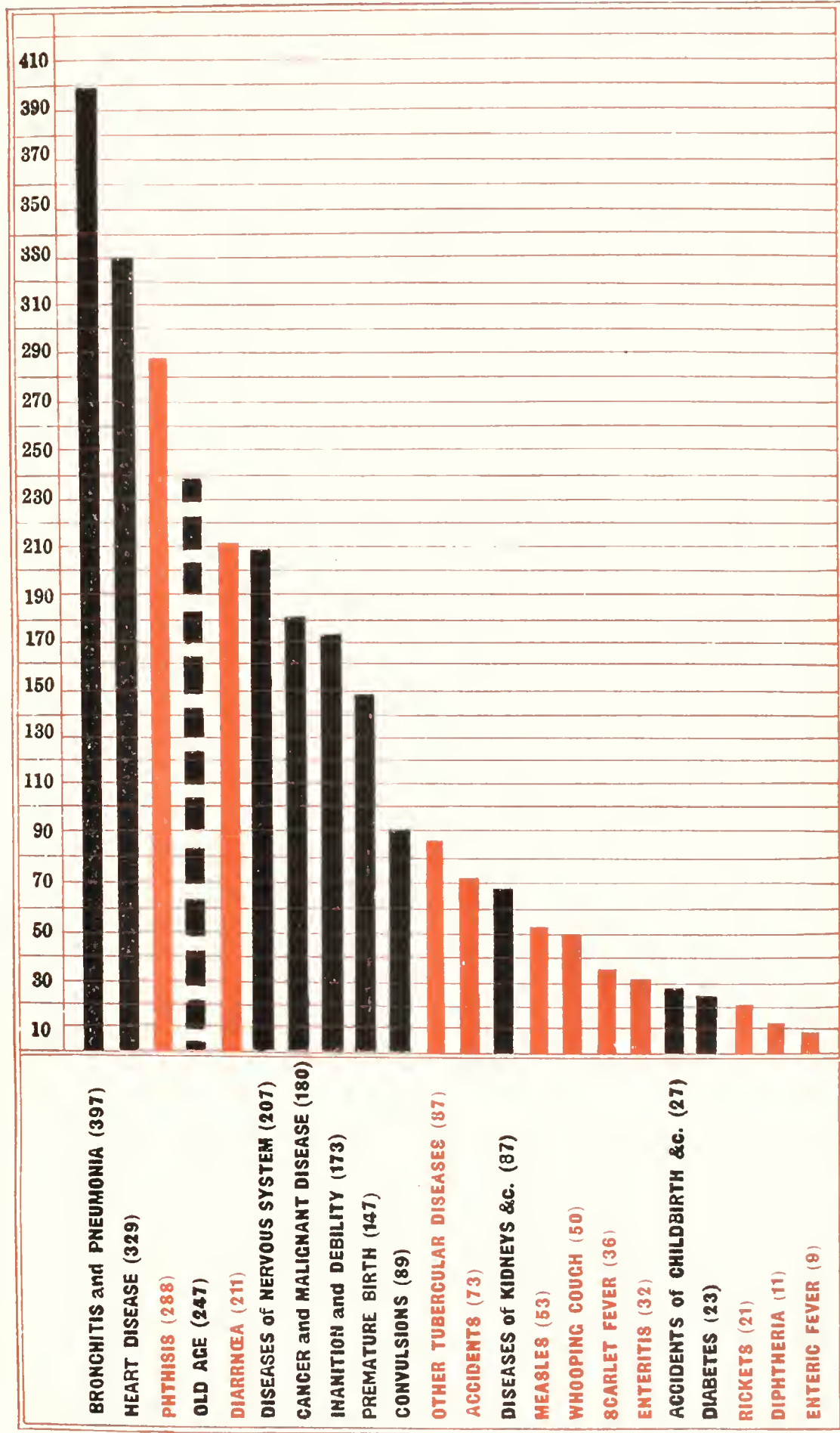
The following are the principal causes of death, with the number of deaths attributed to each, during 1905. The result is shown graphically in the accompanying diagram :

CAUSES OF DEATH IN 1905.					Number of Deaths.
Bronchitis and Pneumonia	...	...	...	...	397
Heart Disease	...	...	...	...	329
<u>Phthisis</u>	...	...	...	...	288
Old Age	...	...	...	...	247
<u>Diarrhoea</u>	...	...	...	...	211
Diseases of Nervous System, Paralysis, Apoplexy, &c.	...	...	...	...	207
Cancer and Malignant Disease	...	...	...	...	180
Inanition, Debility and Marasmus	...	...	...	...	173
Premature Birth	...	...	...	...	147
Convulsions	...	...	...	...	89
<u>"Other Tubercular Diseases"</u>	...	...	...	...	87
<u>Accidents</u>	...	...	...	...	73
Diseases of Kidneys and Urinary System	...	...	...	...	67
<u>Measles</u>	...	...	...	...	53
<u>Whooping Cough</u>	...	...	...	...	50
<u>Scarlet Fever</u>	...	...	...	...	36
<u>Enteritis</u>	...	...	...	...	32
Accident of Childbirth and Puerperal Fever	...	...	...	...	27
Diabetes	...	...	...	...	23
<u>Rickets</u>	...	...	...	...	21
<u>Diphtheria</u>	...	...	...	...	11
<u>Typhoid Fever</u>	...	...	...	...	9

In this Table, the presumably preventable causes have been *underlined*, whilst in the Diagram they are shown in *red*.

from the principal causes during year 1905.

("Preventable" causes in Red.)



It will be seen that diseases of the respiratory organs—bronchitis and pneumonia—head the list. This most prolific cause of death is not usually regarded as preventable, but it is probable that everything tending to strengthen the vitality and improve the general health of the people will help to reduce the number of deaths due to it. Next in magnitude comes heart disease. This also is regarded as non-preventable, but it is no doubt aggravated by the stress and strain of an arduous life. Then comes phthisis, a most important cause of death, and which we now regard as very largely a preventable one. I am dealing with this separately. Next comes old age. It is fairly high up in the list, but we should like to see it at the top. Although it is a doubtful blessing to live to a very advanced age, it is a natural instinct implanted in all to wish to live to at least the traditional three score years and ten. Diarrhoea, I am pleased to say, is not so high on the list as would have been the case some years ago. It must be regarded as essentially a preventable cause, and under ideal conditions of life it ought to entirely disappear. I shall be surprised if it figures appreciably in the statistics of Garden City. Of the other causes of death, cancer is one which unfortunately is on the increase. At present we are in the dark as to the etiology of this complaint. A special Cancer Commission is now trying to throw some light on this important subject, and exhaustive investigations are being carried out. The small proportion of deaths caused by either diphtheria or typhoid fever is very satisfactory.

INFANT MORTALITY.

The number of deaths under the age of one year was **863**.

I am pleased to be able to say that this is the smallest number of infant deaths in any year since the Borough was extended. This is very satisfactory as it shows that what was at one time the great blot on the sanitary statistics of the town, *viz.* the excessive infant mortality, is being wiped away.

Owing to the improvement which has taken place in this direction, indeed, the effect of the diminishing birth-rate is largely neutralised as already mentioned.

Year.	Deaths of Infants under one year.		
1891	1039
1892	1150
1893	1324
1894	971
1895	1232
1896	1154
1897	1288
1898	1183
1899	1230
1900	1083
1901	1098
1902	981
1903	971
1904	964
1905	863

The Infant Death-rate or proportion of infant deaths to births, was 146.5 per 1000 births. This is the lowest figure hitherto recorded.

The continuous decline which has occurred in the last fifteen years is shown by the following figures :—

INFANT MORTALITY.

Year.	Deaths under one per 1000 births.		
1891*	214
1892	197
1893	220
1894	161
1895	206
1896	185
1897	206
1898	191
1899	196
1900	174
1901	178
1902	163
1903	161
1904	161
1905	146

199.6

190.4

161.8

* Borough extended.

The saving of life indicated by the above figures is very considerable. Taking the average of the past five years as compared with the five years 1891-95, it amounts to 38 on every 1000 children born. It is probable that the falling birth-rate and the reduced rate of infant mortality are, to some extent, cause and effect. Fewer babies being born enhances the value of infant life; and the family being smaller enables the mother to give more time and attention to the new-born infant than can be the case when a large family of little children already exists and has to be provided for.

In order to ascertain on which diseases the saving in life has been chiefly effected, I have calculated the average infant mortality during the last two quinquennia from eight of the principal causes of death in infants.

TABLE SHOWING DEATHS OF INFANTS FROM VARIOUS CAUSES PER 100 BIRTHS.

Period.	Atrophy and Debility.	Diarrhea.	Convulsions.	Lung Diseases	Premature Birth.	Tubercular Diseases.	Measles.	Whooping Cough.	Other Causes.	Total.
5 years 1896-1900	27.7	41.9	20.4	30.6	21.4	7.9	3.5	4.7	32.3	190.4
5 years 1901-1905	29.0	28.4	16.6	21.5	22.7	9.8	2.3	5.3	26.2	161.8

RELATIVE MORTALITY OF MALE AND FEMALE INFANTS.

It is a well-known and regrettable fact that there are more spinsters than bachelors amongst the adult population in this country, with the result that many women are, of necessity, doomed to a life of "single blessedness." It is, perhaps, not so well known that Nature has attempted to guard against this evil (?) by specially providing that more males than females shall be born.

But, unfortunately, male infants appear to be more delicate than female, and more of them die, and this more than compensates for the excess of males that are born.

In Leicester during the past five years the actual figures have been as follows:—

Year.	Births.		Deaths of Infants under one year of age.	
	Males.	Females.	Males.	Females.
1901	3132	3037	609	489
1902	3182	3131	562	419
1903	3032	2986	548	423
1904	3050	2951	536	428
1905	3052	2836	494	369
	15448	14941	2749	2128

We see from this, that whilst during the past five years 507 more boys than girls have been born, no less than 621 more boys have died, leaving a balance of more than 100 on the side of the females.

Nor is this all, for it is not only during the first year of life that the rate of mortality is higher amongst males. At all other periods of life, excepting between the ages of ten and twenty, the mortality of males is higher than of females.

It is a point of some interest that although there is in this country, as I have stated, some excess of male births over female births, yet the excess is smaller than in any other European country.

Moreover, the proportion varies considerably in different parts of this country, even in neighbouring counties, and the excess is greater in Rutlandshire than in Leicestershire.

DEATHS OF INFANTS, PRINCIPAL CAUSES.

	1901.	1902.	1903.	1904.
Atrophy, Inanition and Debility	194	179	162	180
Bronchitis and Pneumonia ...	167	146	146	81
Convulsions	130	108	103	87
Diphtheria	12	1	4	0
Diarrhoea and Enteritis ..	259	154	156	277
Gastritis and Diseases of Stomach	24	13	21	17
Heart Disease	20	17	29	11
Measles	6	29	12	11
Premature Birth and Atelectasis	136	154	167	115
Syphilis	3	10	9	5
Teething	13	10	10	16
Tubercular Disease	48	44	66	49
Violence	15	21	15	15
Whooping Cough	33	39	13	50
Other Causes	38	50	58	60
	<hr/> 1098	<hr/> 981	<hr/> 971	<hr/> 974
Number of Children born ...	6169	6313	6018	5981

ZYMOTIC MORTALITY.

In calculating the Zymotic Mortality, it has been usual to reckon only the deaths from what are known as the "seven principal zymotics."

There were 370 of these deaths, caused as follows:—

Smallpox	No deaths.
Measles	53 ..
Scarlet Fever	36 ..
Diphtheria	11 ..
Whooping Cough	50 ..
Enteric Fever	9 ..
Diarrhoea	211 ..
Total	<hr/> 370 ..

This is equivalent to a rate per 1,000 population of 1·64. The zymotic rate in recent years was as follows:—

1896	...	...	2·98	1901	...	...	2·34
1897	...	...	1·97	1902	...	...	1·54
1898	...	...	3·41	1903	...	...	1·4
1899	...	...	3·41	1904	...	...	1·95
1900	...	...	3·60	1905	...	...	1·64

It is thus seen that the zymotic rate last year, as compared with previous years, was satisfactory.

WARD STATISTICS.

This year I am able to give more complete statistics for each of the municipal wards in the Borough than has previously been the case.

An arrangement has been made with the Registrars of Births and Deaths for the births to be classified according to wards, which has not hitherto been done. This enables me to give (*a*) the birth-rate in each ward: and (*b*) the infant death-rate, which is calculated on the births. These rates are of great interest.

Hitherto, in calculating ward statistics I have used the census population, but it is now some years since the census was taken, and there is a natural tendency for the outlying wards to increase in population at a much greater rate than the central wards. The latter, indeed, owing to the encroachments of factories, &c., may even decrease in population. In order, therefore, to ascertain as nearly as possible the true population of the different wards, I have obtained from the Chief Assistant Overseer the number of inhabited houses in each ward at the middle of last year. On this basis, and assuming that the number of persons per inhabited house in each ward remains the same as at the census, I have calculated the population for each ward.

The result is shown in Table I.

It will be seen that in Newton, Wyggeston, Latimer, Charnwood, and De Montfort Wards the number of inhabited houses has decreased since the census: Wycliffe Ward has

remained practically stationary: whilst the increase has been greatest in Westcotes, Belgrave, West Humberstone, Spinney Hill, and Knighton Wards—these being the districts where building operations are chiefly being carried on.

Coming now to the *death-rates* in the different wards (Table II), we see the same contrasts as have been noticed in previous years. Newton Ward, I regret to say, again appears in the unenviable position of having the highest rate—*viz.*, 20.9, being much worse than the next highest, Wyggeston, with 15.6. At the other end of the scale we have Knighton, with only 7.5; West Humberstone, 8.4; and Spinney Hill, 9.6. These last three rates, however, are unnaturally low, and indicate that the populations have an abnormal age distribution, due, no doubt, to many young couples settling in these districts. The death-rate amongst this class is, of course, very small, and the fact that prosperous young people tend to migrate to the new houses in the outskirts will necessarily lower the death-rate of these districts, but at the expense of the older districts, which are left with an undue proportion of old people. The important influence of poverty in determining differences in death-rates I have emphasised in previous reports.

In Table II, I also show the death-rates in each ward from zymotic disease, diarrhoea, and phthisis. Newton Ward comes out highest, both as regards diarrhoea and phthisis mortality, though zymotic disease, other than diarrhoea, is below the average. I have observed the same thing in previous years. The wards with the lowest phthisis rate are West Humberstone, Wycliffe, Knighton and Spinney Hill, in all of which, except Wycliffe, the general death-rate is also very low.

As regards *birth-rates and infant death-rates*, I have shown these in juxtaposition in Table III. We see the same significant contrasts between the different wards as in the previous table, only the contrast between the different infant death-rates is even more marked than was the case with the general death-rates. Thus Newton Ward has the truly appalling figures of 262.3, as compared with only 76.8 in Spinney Hill, or nearly four to one. A very surprising figure is the infant death-rate for Aylestone,

which is 212.0, or second only to Newton, a most unsatisfactory rate for a new district situated on the outskirts of the town. Belgrave, on the opposite side of the Borough, with nearly the same general death-rate, has a much lower infant death-rate—*viz.*, 150.6. The next highest after Newton and Aylestone is Wyggeston, with 200, which, from its proximity to Newton Ward in the old part of the town, is not so surprising.

At the opposite end of the scale we have Spinney Hill, De Montfort, and Knighton Wards, each with infant death-rates below 100.

CAUSES OF HIGH MORTALITY IN NEWTON WARD.

As to the explanation of the excessive mortality in Newton Ward, I have pointed out in previous reports that it is the oldest part of the town: it lies low: it is composed almost entirely of small, old, and poor-class houses with low rents. For this reason it is largely inhabited by people who have sunk below the poverty line, whilst it is depleted of many of its younger, more robust, and more prosperous inhabitants, who migrate to the more favoured parts of the town.

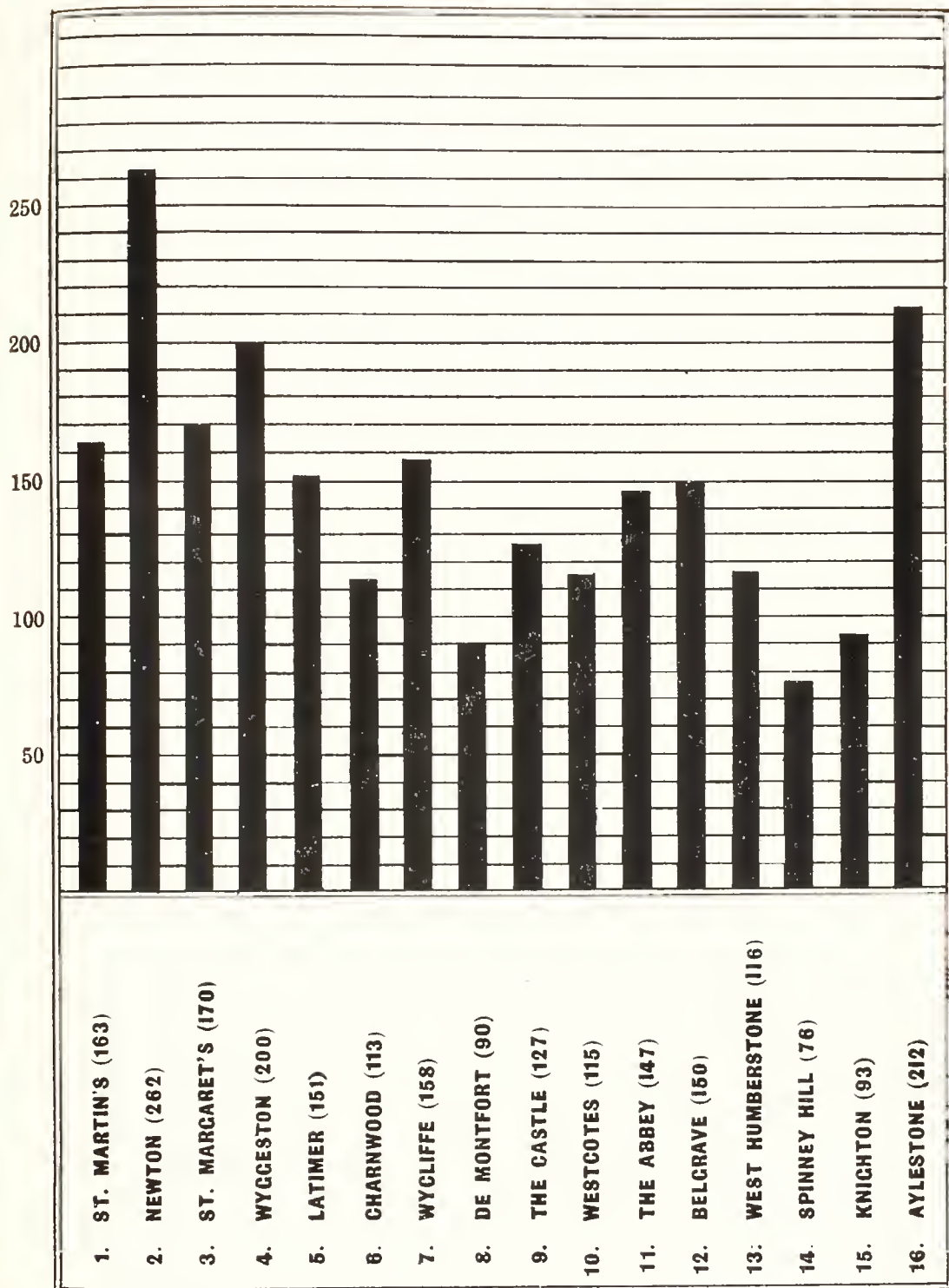
These facts, I have no doubt, largely account for the higher mortality in this ward, but I am not satisfied that they will account for the whole of the difference. It is possibly more than a coincidence that the branch sewers in this part of the town have not yet been re-laid, and I am glad to note that this necessary work is now being carried out.

THE RELATIONSHIP BETWEEN BIRTH-RATE AND INFANT DEATH-RATE.

There is one fact which a study of Table III. at once reveals, and that is, speaking generally, that there is an apparent connection between a high birth-rate and a high infant death-rate.

This is brought out more strikingly if the five wards with the *lowest* birth-rates and the five with the *highest* birth-rates be grouped together, as shown below:—

DIAGRAM shewing INFANT DEATH-RATE
in Municipal Wards.



WARDS WITH LOWEST BIRTH-RATES.*

			Birth-rate.		Infant Death-rate.
De Montfort	...	...	12·8 [†]	...	90
Knighton	..	...	19·5	...	93
Charnwood	...	...	21·5	...	113
Westcotes	...	...	22·2	...	115
Spinney Hill	...	...	22·9	...	73
Average			19·7		97

WARDS WITH HIGHEST BIRTH-RATES.

			Birth-rate.		Infant Death-rate.
Aylestone	...	...	28·7	...	212
The Abbey	...	...	29·6	...	147
Belgrave	...	...	29·8	...	150
Newton	...	...	31·1	...	262
Wyggeston	...	...	33·3	...	200
Average			30·5		194

It is rather a curious fact, not without some significance, that in 1898 when the birth-rate of the town had not fallen as low as it now has, the birth-rate and infant death-rate of the *whole* town were almost exactly the same as was the case last year in the second of the above two groups, *viz.*, birth-rate, 30·5, and infant death-rate, 191.

Whilst a high infant death-rate is not a necessary accompaniment of a high birth-rate, we find in practice that they very frequently go together, and the obvious conclusion, of course, is that when the birth-rate is high, infant life is at a discount; babies are less valued by their parents, and therefore less cared for, and a higher rate of mortality is the result.

As regards the difference in birth-rates between the different wards, it is important to remember that variations in crude birth-rates may depend upon other causes besides the relative

* St. Martin's Ward has not been included, as owing to its small population and rather exceptional character it is not strictly comparable with the other wards.

† See remarks about birth-rate in De Montfort Ward on next page.

fecundity of the population. A most important factor is the proportion of married women at child-bearing age. This often varies considerably. Thus, in the case of De Montfort Ward, which has the extraordinary low birth-rate of only 12·8, there is little doubt that the explanation largely lies in the exceptional character of the population as regards age and sex distribution. De Montfort is an old respectable neighbourhood, in which the number of the population is not increasing. Many of the inhabitants have resided there for many years, and comparatively few young couples come to settle. Moreover, many of the houses keep domestic servants. Such conditions obviously do not favour a high proportion of births. The same remarks apply to Saint Martin's Ward with its birth-rate of only 13·7.

Whilst making due allowance for this factor, however, it is quite certain that the chief cause of the difference in the birth-rates in different districts is a social one. It is well-known that as we go up in the social scale the birth-rate tends to go down, and *vice-versa*. This is the almost universal experience. Belgravia and Whitechapel, as regards their birth-rates, are always found at opposite ends of the scale.

MUNICIPAL WARDS. TABLE I.
AREA, NUMBER OF INHABITED HOUSES AND POPULATION.

WARD.	Area in Acres.	Inhabited Houses, Census 1901.	Inhabited Houses, July, 1905.	No. of Persons per House, 1901.	Population Census, 1901.	Estimated Population, 1905.
1. St. Martin's	...	808	845	4.69	3791	3963
2. Newton	153	2442	2321	4.23	10330	9817
3. St. Margaret's	274	2789	3624	4.53	12639	13698
4. Wyggeston	111	3594	3408	4.42	15890	15063
5. Latimer	250	3569	3563	4.84	17275	17244
6. Chamwood	116	1988	1977	4.56	9084	9015
7. Wycliffe	147	2760	2761	4.27	11810	11817
8. De Montfort	350	1764	1741	4.48	7907	7799
9. The Castle	370	3178	3233	4.52	14384	14613
10. Westcotes	801	3713	4804	4.51	16752	21666
11. The Abbey	891	3756	4081	4.82	18116	19670
12. Belgrave	1013	3046	3529	4.54	13849	16021
13. West Humberstone	887	3336	3749	4.71	15717	17657
14. Spinney Hill	702	4535	5068	4.69	21279	23768
15. Knighton	910	2236	2881	4.57	10221	13166
16. Aylestone	1530	2033	2265	4.84	9860	10962

MUNICIPAL WARDS. TABLE II.

DEATH RATES, ZYMOTIC RATES, DIARRHŒA RATES AND
PHTHISIS RATES IN 1905.

WARD.		Death-rate (all causes).	Zymotic- rate.	Diarrhœa- rate.	Phthisis- rate.
1.	St. Martin's ...	11·7	·0	·7	1·2
2.	Newton's ...	20·9	·4	3·4	2·0
3.	St. Margaret's ...	14·7	·8	1·2	1·7
4.	Wyggeston ..	15·6	1·1	2·0	1·9
5.	Latimer ...	13·5	1·2	1·8	1·5
6.	Charnwood ...	12·3	·8	·3	1·9
7.	Wycliffe ...	15·5	·6	·9	·4
8.	De Montfort ...	11·7	·2	·2	1·1
9.	The Castle ...	11·6	·9	·8	1·3
10.	Westcotes ...	10·3	·2	·4	·8
11.	The Abbey ...	12·0	·9	1·1	·9
12.	Belgrave ...	12·4	1·4	·6	·8
13.	West Humberstone	8·4	·6	·6	·1
14.	Spinney Hill ...	9·6	·4	·5	·6
15.	Knighton ...	7·5	·2	·1	·5
16.	Aylestone ...	13·1	1·0	·2	1·2

N.B.—The deaths occurring in the Leicester Infirmary have been distributed to their respective wards. Those occurring in the Workhouse and Workhouse Infirmary and in the Borough Asylum, have had to be excluded, as the addresses of the patients are not obtainable. The rates are calculated on the populations given in Table 2, but in the case of Wards 7 and 13 a deduction has been made for the population of the Workhouse and Asylum respectively.

MUNICIPAL WARDS. TABLE III.

BIRTH-RATES AND INFANT DEATH-RATES,

1905.

WARD.	Births.	Deaths under 1.	Birth-rate.	Infant Death-rate per 1000 Births.
1. St. Martin's ...	55	9	13·7	163·6
2. Newton ...	305	80	31·1	252·3
3. St. Margaret's ...	387	66	28·2	170·5
4. Wyggeston ...	500	100	33·1	200·0
5. Latimer ...	495	75	28·7	151·5
6. Charnwood ...	194	22	21·5	113·4
7. Wycliffe ...	302	48	25·8	158·9
8. De Montfort ...	100	9	12·8	90·0
9. The Castle ...	370	47	25·3	127·0
10. Westcotes ...	483	56	22·2	115·9
11. The Abbey ...	584	86	29·6	147·3
12. Belgrave ...	478	72	29·8	150·6
13. West Humberstone	514	60	29·03	116·7
14. Spinney Hill ...	547	42	22·9	76·8
15. Knighton ...	258	24	19·5	93·0
16. Aylestone ...	316	67	28·7	212·0

TABLE IV.

Deaths in each Ward from the chief Zymotic Diseases in 1905.

Name and Number of Ward.				Small Pox.	Whooping Cough.	Measles.	Scarlet Fever.	Diphtheria.	Fever.	Diarrhoea.	Totals.
1.	Saint Martin's	...	...	...	..	...	..	...	3	3	
2.	Newton	...	..	...	1	2	...	...	1	34	38
3.	Saint Margaret's	...	...	5	3	3	1	...	17	29	
4.	Wyggeston	...	...	10	3	2	3	...	31	49	
5.	Latimer	...	...	6	10	3	...	2	31	52	
6.	Charnwood	...	...	1	...	3	1	...	3	8	
7.	Wycliffe	...	...	2	5	5	...	...	11	23	
8.	De Montfort	...	...	...	1	1	...	...	2	4	
9.	Castle ...	...	...	3	2	6	...	2	12	25	
10.	Westcotes	...	...	2	1	...	1	...	8	12	
11.	The Abbey	...	...	5	7	2	2	1	23	40	
12.	Belgrave	...	...	8	11	1	1	1	10	32	
13.	West Humberstone	...	...	4	1	2	...	...	11	18	
14.	Spinney Hill	...	...	...	...	7	...	1	12	20	
15.	Knighton	...	...	1	1	...	...	1	1	4	
16.	Aylestone	...	...	2	6	1	2	...	2	13	

Deaths at Borough Isolation Hospital have been distributed to their respective wards.

TABLE V. (a).
VITAL STATISTICS OF ENGLAND AND WALES FOR 1905.

	Annual Rates per 1000 Living.									Infant Mortality.	
	Births.	Deaths. All Causes.	Deaths from seven principal Epidemic Diseases.	Smallpox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Deaths under one year per 1000 Births.
England and Wales ...	27·2	15·2	1·52	0·00	0·32	0·11	0·16	0·25	0·09	0·59	128
76 Great Towns ...	28·2	15·7	1·88	0·00	0·39	0·13	0·16	0·29	0·08	0·83	140
141 Smaller Towns ...	26·9	14·4	1·50	0·00	0·31	0·11	0·15	0·23	0·13	0·57	132
England and Wales, less than 217 Towns ...	26·3	14·9	1·09	0·00	0·24	0·09	0·15	0·20	0·09	0·32	113

The above figures are subject to revision.

TABLE V.

VITAL STATISTICS OF THE GREAT TOWNS FOR 1905 (ARRANGED IN ALPHABETICAL ORDER).

TOWNS.	Estimated Population 1905.	Death- rate (Corrected for Age and Sex).	Birth- rate.	Deaths under one year per 1000 Births.	Death-rates per 1000 Persons living from :—							
					Smallpox.	Measles.	Scarlet Fever.	Diphtheria	Whooping Cough.	Enteric Fever.	Diarrhœa.	Tuberculosis (all forms).
Birkenhead	... 116,035	16·84	32·0	129	0·00	0·27	0·24	0·18	0·001	0·005	0·99	1·68
Brighton	... 127,183	13·11	22·8	102	0·00	0·02	0·008	0·04	0·09	0·016	0·34	1·89
Bristol	... 358,515	15·14	26·9	122·5	0·00	0·5	0·1	0·16	0·34	0·3	0·47	1·13
Birmingham	... 542,959	17·3	29·2	155·0	0·00	0·44	0·10	0·18	0·29	0·07	0·86	1·84
Blackburn	... 132,742	18·5	24·0	146·2	0·00	0·3	0·5	0·2	0·08	0·1	0·7	1·7
Bolton	... 178,111	17·4	25·1	166·0	0·00	0·51	0·02	0·09	0·04	0·19	1·01	1·57
Bradford	... 286,799	15·33	21·08	144·3	0·02	0·04	0·15	0·28	0·35	0·07	0·52	1·53
Burnley	... 101,682	16·80	26·67	172	0·04	0·1	0·19	0·18	0·27	0·12	1·2	1·67
Cardiff	... 180,054	14·34	28·54	118·0	0·10	0·44	0·02	0·12	0·21	0·04	0·34	1·82
Croydon	... 147,704	13·0	26·4	96·0	0·00	0·16	0·07	0·17	0·21	0·03	0·35	1·5
Derby	... 122,207	14·3	25·5	151·7	0·37	0·37	0·08	0·19	0·17	0·08	0·60	1·3
Gateshead	... ..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Halifax	... 108,419	15·05	19·2	130·0	0·00	0·01	0·10	0·29	0·25	0·08	0·14	.....

Leicester	228,132	14.33	25.81	146.5	0.00	0.23	0.15	0.04	0.21	0.04	0.92	1.73
Leeds ...	456,787	16.6	27.1	152.0	0.00	0.24	0.03	0.10	0.27	0.11	0.08	1.86
Liverpool	730,143	20.64	33.2	154.0	0.00	0.33	0.41	0.20	0.20	0.06	1.32	2.25
Manchester	631,185	19.90	29.0	159	0.00	0.37	0.12	0.20	0.31	0.09	1.15	2.16
Newcastle	264,511	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nottingham	251,671	17.49	26.5	155.0	0.00	0.91	0.07	0.19	0.24	0.09	0.75	1.67
Norwich	116,741	15.80	27.29	174.8	0.00	0.02	0.02	0.21	0.11	0.07	1.16	1.92
Oldham	140,225	18.10	24.3	150.0	0.03	0.46	0.32	0.08	0.41	0.08	0.70	1.47
Plymouth	116,000	16.5	25.4	137	0.00	0.09	0.27	0.13	0.07	0.08	0.68	1.66
Portsmouth	201,975	17.03	28.02	134	0.00	1.08	0.05	0.34	0.22	0.09	0.85	1.90
Preston ...	115,721	18.01	28.16	150.0	0.01	0.72	0.07	0.14	0.65	0.14	1.14	1.90
Salford ...	231,514	19.00	30.5	150.0	0.00	0.3	0.28	0.30	0.19	0.19	1.18	2.3
Sheffield	440,414	18.39	29.72	167.0	0.00	0.94	0.22	0.13	0.29	0.10	1.55	1.6
Sunderland	152,659	18.6	34.2	143.0	0.00	0.66	0.01	0.19	0.38	0.2	0.8	2.35
Swansea	96,384	17.7	30.9	131.0	0.00	....	.....	.....	.....	.....	0.47	2.13
West Ham	294,997	16.5	30.5	156.0	0.00	0.33	0.10	0.27	0.56	0.09	1.56	1.51
Wolverhampton	99,456	15.3	28.7	136.0	0.00	0.45	0.15	0.18	0.12	0.10	1.27	1.31

TABLE VI.

Showing mean Weekly Temperature of Earth at Depth of 1ft.
and 4ft. for the Year 1905.

Week ending.					1 foot.	4 foot.	Number of Deaths per week. from Diarrhœa.
May	6	...	...	...	48.8	46.0	...
"	13	...	...	...	51.2	47.6	...
"	20	...	...	...	52.6	49.1	...
"	27	...	...	...	54.0	49.8	...
June	3	...	...	...	57.5	51.0	...
"	10	...	...	...	56.0	52.7	...
"	17	...	...	...	56.5	53.6	1
"	24	...	...	...	59.1	54.8	...
July	1	...	...	...	62.8	56.5	...
"	8	...	...	...	63.4	57.7	1
"	15	...	...	...	65.2	59.2	3
"	22	...	...	...	65.2	60.7	3
"	29	...	...	...	65.5	61.0	15
Aug.	5	..	...	...	62.5	61.2	18
"	12	...	...	...	61.5	60.0	33
"	19	..	...	...	61.5	60.0	24
"	26	...	...	..	60.8	59.5	25
Sept.	2	...	...	...	59.0	59.0	25
"	9	...	...	...	59.2	58.5	18
"	16	...	...	...	56.1	57.7	15
"	23	...	...	...	54.5	56.4	9
"	30	...	...	...	53.0	54.9	3
Oct.	7	..	...	...	52.0	54.0	1
"	14	...	...	...	51.3	52.8	1
"	21	..	...	...	48.9	51.1	3
"	28	...	...	...	44.8	49.9	1

TABLE VII.

Weekly Deaths from Diarrhoea from 1894-1905.

Week of the Year.	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905
25th...	0	4	7	0	1	1	3	1	2	0	0	0
26th ..	1	11	11	0	2	5	2	1	3	1	1	0
27th...	4	19	20	1	1	1	4	1	2	0	1	1
28th...	5	28	14	10	4	3	4	2	1	0	2	3
29th...	8	28	35	7	4	4	12	4	1	3	5	3
30th...	15	38	51	13	14	11	21	15	2	1	8	15
31st ...	20	37	49	21	18	24	16	17	0	9	21	18
32nd...	22	26	16	41	32	25	25	17	0	9	30	33
33rd...	28	18	14	53	28	31	27	24	2	9	43	24
34th...	16	25	15	60	35	46	38	22	2	12	31	25
35th...	14	22	8	48	48	36	38	27	3	15	30	25
36th...	8	18	6	37	31	42	24	29	4	8	24	18
37th...	8	23	1	28	32	17	12	16	6	10	24	15
38th...	4	24	1	15	24	7	18	6	10	8	13	9
39th...	3	6	2	7	10	3	11	8	19	6	8	3
40th...	3	8	1	2	13	2	7	10	16	6	7	1
41st ...	1	10	1	3	4	3	4	5	19	2	3	1
42nd...	0	5	2	0	3	3	2	2	10	1	6	3
43rd...	0	3	0	1	3	1	3	2	8	2	4	1
44th...	2	1	0	0	6	0	1	1	5	0	2	0

TABLE VIII.
LEICESTER BOROUGH.

Showing estimated Population, Marriage-rates, Birth-rates, and
Death-rates (General and Zymotic) per 1000 living during the
last 60 years, 1845-1905.

Year.	Estimated Population.	Marriage Rate.	Birth Rate.	Death Rate.	Zymotic (Death) Rate.
1845	54,737	24.04	40.14	30.85	9.07
1846	55,707	21.00	39.72	29.48	8.11
1847	56,696	18.80	35.36	25.69	4.12
1848	57,705	20.86	34.71	25.77	5.87
1849	58,736	21.58	36.96	28.73	7.05
1850	59,788	24.04	37.45	23.64	4.13
1851	60,760	21.11	40.11	25.57	5.48
1852	61,467	22.96	38.83	28.84	8.42
1853	62,181	22.90	36.71	27.02	5.45
1854	62,903	20.40	39.06	25.11	6.65
1855	63,624	19.14	36.16	23.55	2.87
1856	64,366	20.02	37.32	21.16	3.10
1857	65,119	20.60	37.48	27.58	8.19
1858	65,835	19.14	34.54	28.76	8.07
1859	66,663	22.56	37.77	24.59	4.99
1860	67,456	19.80	38.05	20.47	1.27
1861	68,638	18.58	37.01	25.25	5.71
1862	70,986	21.30	38.37	23.38	3.01
1863	73,413	25.74	40.00	29.95	7.96
1864	75,922	25.68	41.01	26.96	5.41
1865	78,516	25.38	41.09	25.02	5.20
1866	81,197	24.94	42.02	23.33	3.37
1867	83,970	22.18	41.66	24.59	4.31
1868	86,837	22.62	41.32	28.15	7.88
1869	89,804	21.12	41.87	25.60	5.10
1870	92,873	21.22	40.90	27.33	7.24
1871	95,823	23.06	41.55	26.07	5.83
1872	98,251	23.90	42.36	26.95	8.23
1873	100,741	24.00	44.14	23.83	5.05
1874	103,294	20.90	42.34	24.29	3.83
1875	105,913	22.36	40.31	27.28	6.56
1876	108,599	22.64	44.02	23.58	5.26
1877	111,355	21.24	42.68	23.48	3.21
1878	114,182	19.38	41.85	21.89	4.18
1879	117,083	19.48	40.11	22.64	3.06
1880	120,059	19.60	40.04	24.73	6.48
1881	123,146	18.66	38.26	21.55	4.45
1882	126,275	19.02	38.46	20.04	3.23

TABLE VIII.—Continued.

Year.	Estimated Population.	Marriage Rate.	Birth Rate.	Death Rate.	Zymotic (Death) Rate.
1883	129,483	18·64	37·26	19·18	2·56
1884	132,773	17·34	36·53	22·12	4·20
1885	136,147	16·36	34·39	19·39	3·32
1886	139,606	17·46	34·80	19·62	2·81
1887	143,153	16·60	32·79	19·10	3·05
1888	146,790	15·48	32·79	18·16	2·45
1889	150,520	16·08	31·82	16·63	2·30
1890	154,344	16·52	30·44	17·79	2·18
1891*	177,353†	19·16	33·58	21·22	3·39
1892‡	180,550	16·71	32·21	18·00	2·57
1893†	183,900	15·85	32·65	19·72	3·56
1894	187,250	16·70	32·01	14·57	1·93
1895	190,600	16·41	31·28	17·41	3·01
1896	194,100	17·52	32·00	16·88	2·98
1897	197,600	16·78	31·63	17·98	1·97
1898	201,250	17·78	30·56	17·29	3·41
1899	204,900	17·58	30·61	18·18	3·41
1900	208,600	17·30	29·75	17·87	3·60
1901	212,498	17·17	29·03	15·71	2·34
1902	216,389	16·19	29·17	14·65	1·54
1903	220,272	16·20	27·31	13·91	1·53
1904	224,186	16·46	26·67	14·56	1·95
1905	228,132	16·53	25·81	13·42	1·64

N.B.—The above figures, prior to the year 1890, are those supplied by Mr. J. T. Biggs to the Royal Commission on Vaccination, and are taken from the Commission's 4th Report.

* All figures after 1891 refer to extended Borough.

† This is the Population of the extended Borough. The figures in the other columns for same year refer to the old Borough.

‡ The figures for the nine years, 1892—1900, have been revised on the basis of the 1901 Census.

TABLE IX.

Number of Deaths from certain specified causes in 1905 and ten previous years.

	1905.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.
Zymotic Diseases (except Diarrhoea)	222	331	291	389	432	549	297	222	205	177	171
Diarrhoea	...	272	360	323	292	286	224	137	133	289	211
Enteritis	...	68	112	86	109	90	78	42	52	35	32
Cancer	...	110	153	116	139	140	161	171	192	213	180
Phthisis	...	189	215	221	202	230	271	272	266	353	288
Apoplexy and Paralysis	...	158	179	164	187	164	182	207	179	201	165
Convulsions	...	142	185	170	151	134	159	120	117	107	89
Heart Disease	...	247	266	271	294	305	290	343	322	301	313
Bronchitis and Pneumonia	...	495	535	553	565	623	494	480	421	405	397
Premature Birth	...	156	151	131	143	135	130	151	154	111	147
Atrophy and Debility	...	185	202	166	209	187	204	191	168	187	173
Old Age	...	197	160	189	224	211	198	214	218	240	247
Violence	...	89	96	67	115	109	110	110	88	87	84
Ill-defined and not specified causes	35	46	36	19	23	38	42	53	45	49	48

TABLE X.

Showing the number of Notification Certificates for the principal Zymotic Diseases for the twelve years,
1894-1905.

DISEASE.	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905
Small Pox	9	4	0	0	0	0	4	9	406	321	5
Scarlet Fever	...	855	723	1645	923	1247	839	758	826	533	554	1117
Diphtheria...	...	66	75	229	218	892	1452	1034	320	211	97	173
Enteric Fever	...	215	248	215	237	162	117	126	81	58	64	68
Erysipelas	171	202	218	230	341	306	181	225	214	239	253
Cholera	1	...	...	...	...	...	...	...	...	...
Puerperal Fever	6	10	20	11	18	26	12	15	11	16	20
TOTALS ...	1322	1265	2845	2327	1619	2660	2740	2115	1476	1433	1291	1636

TABLE XI.

Showing the Number of Deaths from Zymotic Diseases in the ten years 1895-1904, and in the year 1905.

DISEASE.	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905
Small Pox ...	0	0	0	0	0	0	0	5	21	4	0
Measles ...	29	120	12	211	31	49	17	73	74	32	53
Scarlet Fever ...	15	48	73	44	42	28	6	11	15	4	36
Diphtheria ...	36	53	73	63	222	316	155	29	28	6	11
Whooping Cough ...	87	47	82	19	84	46	77	67	36	89	50
Enteric Fever ...	38	40	38	27	28	26	20	12	13	14	9
Diarrhoea ...	369	272	360	323	292	286	224	137	133	289	211
Erysipelas ...	6	10	6	9	13	5	5	6	9	6	3
Influenza ...	8	9	0	14	6	41	13	14	6	17	2
Puerperal Fever ...	3	4	7	2	6	8	4	5	3	5	7
TOTALS	591	603	651	712	724	805	521	359	338	466	382

TABLE XII.

Showing the Number of Inhabited Houses, Marriages, Births, Deaths, Zymotic Deaths, and Deaths in Public Institutions.

Year.	No. of Inhabited Houses.	Marriages.	Registered Births.	Corrected Number of Deaths.			Deaths in Public Institutions.	Deaths from Seven Principal Zymotic Diseases.
				Total all Ages.	Under One Year.	Under Five Years.		
1889	29,407	1211	4789	2513	1004	1276	270	247
1890	30,175	1276	4699	2799	958	1263	271	337
1891	35,795	1366	4790	3026	1039	1533	230	484
1892	37,095	1509	5816	3250	1150	1658	393	466
1893	37,895	1458	6006	3627	1324	1768	450	726
1894	38,818	1564	5995	2730	971	1301	383	363
1895	39,438	1564	5962	3320	1232	1611	406	573
1896	40,349	1701	6212	3277	1154	1624	441	580
1897	41,519	1658	6252	3553	1288	1758	340	645
1898	44,472	1789	6152	3480	1183	1703	406	687
1899	44,585	1801	6273	3727	1230	1707	543	699
1900	44,884	1805	6207	3729	1083	1627	583	751
1901	45,547	1825	6169	3338	1098	1435	553	499
1902	47,712	1752	6313	3172	981	1303	473	334
1903	48,348	1785	6018	3065	971	1279	583	320
1904	49,043	1845	5981	3266	964	1255	601	438
1905	49,348	1886	5888	3062	863	1148	685	370

NOTE.—In 1891 (Census year) the Borough was extended.
No. of Inhabited Houses of old Borough was 29,288; of new Borough, 35,795.

TABLE XIII.

Showing the Annual Death-rates of Children, and proportion of Deaths in Public Institutions in a Thousand Deaths, for the year 1905, and 17 years preceding.

In Year.	Birth Rate per 1000 of the Population.	Death Rate per 1000 of the Population.	Deaths of Children under one year per 1000 Births. = Infant Death-rate.	Deaths of Children under one year of age per 1000 of Total Deaths.	Deaths of Children under five years of age per 1000 of Total Deaths.	Deaths in Public Institutions per 1000 of Total Deaths.
1888	32.61	17.98	204.7	371.2	505.7	121.2
1889	31.82	16.68	209.6	399.5	507.7	107.4
1890	30.44	17.79	203.7	342.2	451.2	96.7
1891	33.58	21.21	214.5	346.3	511.1	95.3
1892	32.21	18.00	197.7	353.8	510.1	120.9
1893	32.65	19.72	220.4	365.0	487.4	124.0
1894	32.01	14.57	161.9	355.6	476.5	140.2
1895	31.28	17.41	206.6	371.0	485.2	119.2
1896	32.00	16.88	185.7	352.1	495.5	134.5
1897	31.63	17.98	206.0	362.5	494.7	95.7
1898	30.56	17.29	191.1	311.2	489.3	116.6
1899	30.61	18.18	196.0	330.0	458.0	145.7
1900	29.75	17.87	174.4	290.4	436.3	156.3
1901	29.03	15.71	178.6	328.9	429.0	165.6
1902	29.17	14.65	153.3	327.0	410.7	145.3
1903	27.31	13.91	161.3	323.6	426.3	194.3
1904	26.67	14.56	161.1	298.2	384.2	184.0
1905	25.81	13.42	146.5	281.8	374.9	223.7

TABLE XIV.

Rates of Mortality of Children under one year of age from the chief Infantile Diseases, per 1000 Births.

DISEASE.	1900.		1901.		1902.		1903.		1904.		1905.	
	Total Deaths.	Rate per 1000 Births.	Total Deaths.	Rate per 1000 Births.	Total Deaths.	Rate per 1000 Births.	Total Deaths.	Rate per 1000 Births.	Total Deaths.	Rate per 1000 Births.	Total Deaths.	Rate per 1000 Births.
From all causes ...	1083	174.4	1098	178.6	981	153.3	971	161.3	964	161.1	863	146.5
Atrophy and Debility ...	175	28.2	194	31.4	179	28.3	168	27.9	180	30.0	164	27.8
Diarrhoea ...	256	41.2	192	31.1	121	19.1	116	19.2	248	41.4	186	31.5
Convulsions ...	107	17.2	130	21.0	108	17.1	103	17.1	87	14.5	79	13.4
Lung Diseases ...	110	17.7	169	27.3	154	24.3	152	25.2	91	15.2	94	15.9
Premature Births...	135	21.7	130	21.0	151	23.9	154	25.5	111	18.5	147	24.9
Tubercular Diseases ...	53	8.5	53	8.5	85	13.4	71	11.7	49	8.1	45	7.6
Measles ...	9	1.4	6	.9	29	4.5	12	1.9	11	1.8	16	2.7
Whooping Cough...	25	4.0	33	5.3	39	6.1	22	3.6	50	8.3	21	3.5

TABLE XV.

Total Deaths, Death-rate, and Percentage of Deaths, from the eight principal groups of Diseases.

DISEASE.	1902.			1903.			1904.			1905.		
	Total Deaths.	Rate per 1000 Living.	Relative Percentage of Total Deaths.	Total Deaths.	Rate per 1000 Living.	Relative Percentage of Total Deaths.	Total Deaths.	Rate per 1000 Living.	Relative Percentage of Total Deaths.	Total Deaths.	Rate per 1000 Living.	Relative Percentage of Total Deaths.
Zymotic ...	375	1.7	11.7	359	1.6	11.9	481	2.1	14.7	398	1.7	12.9
Parasitic ...	0	.00	.0	1	.0	.0	2	.0	.0	1	.0	.0
Dietetic ...	7	.03	.1	6	.02	.2	10	.04	.3	9	.03	.2
Constitutional ...	584	2.7	17.4	621	2.8	20.7	725	3.2	22.1	630	2.7	20.5
Local ...	1462	6.7	46.0	1369	6.2	45.6	1348	6.0	41.2	1306	5.7	42.6
Developmental ...	581	2.6	17.3	576	2.2	19.2	564	2.5	17.2	586	2.5	19.1
Violence ...	110	.5	3.4	88	.4	2.9	87	.3	2.6	84	.3	2.7
Ill-defined ...	53	.2	1.6	45	.2	1.5	49	.2	1.5	48	.2	1.5

TABLE XVI.
ENTERIC FEVER.—Cases and Deaths in past years.

Year.	Population (in round numbers).	Cases Notified.	Deaths.	Cases per 1000 Pop.	Deaths per 1000 Pop.
1880	120,000	245	46	2·041	·383
1881	123,000	179	29	1·455	·235
1882	126,000	110	19	·873	·150
1883	129,000	85	10	·658	·117
1884	133,000	55	16	·413	·120
1885	136,000	216	36	1·588	·264
1886	140,000	141	19	1·007	·135
1887	143,000	222	31	1·552	·216
1888	147,000	266	32	1·809	·217
1889	151,000	147	22	·973	·145
1890	154,000	165	24	1·071	·155
1891	177,000	178	29	1·005	·163
1892	180,000	116	17	·644	·094
1893	184,000	392	47	2·130	·255
1894	187,000	215	27	1·149	·144
1895	191,000	248	38	1·298	·198
1896	194,000	283	40	1·458	·206
1897	198,000	215	38	1·085	·191
1898	201,000	237	27	1·179	·134
1899	205,000	162	28	·790	·136
1900	209,000	117	26	·359	·124
1901	212,000	126	20	·594	·094
1902	216,000	81	12	·374	·055
1903	220,000	58	13	·263	·059
1904	224,000	64	14	·285	·062
1905	228,000	68	9	·298	·039

TABLE XVII.

Occupations of Persons aged Ten Years and upwards in Leicester.

CENSUS 1901.

MALES.					Number of Persons Engaged.
Commercial or Clerks	...	...	...	...	2020
Conveyance of Men, Goods and Messengers	...	...	...	...	6684
Agriculture, on Farms, Woods and Gardens	...	...	...	...	895
Engineering and Machine Making	...	...	...	...	2893
Cycles, Coaches and other Vehicles	...	...	...	...	661
Building and Works of Construction	...	...	...	...	7006
Wood, Furniture, Fittings and Decorations	...	...	...	...	1441
Brick, Cement, Pottery and Glass	...	...	...	...	253
Paper, Prints, Books and Stationery	...	...	...	...	1603
Hosiery Manufacture	...	...	...	...	3282
Other Textile Manufactures	...	...	...	...	781
Tailors	...	...	...	...	1129
Boot, Shoe, Slipper, Patten and Clog-makers	...	...	...	...	17,770
Food, Tobacco, Drink and Lodging	...	...	...	...	5187
All other Occupations	...	...	...	...	14,374
Total, Occupied					65,979
Retired or Unoccupied					10,270
Total, Occupied or Unoccupied					76,249

TABLE XVII.—Continued.

Occupations of Persons aged Ten Years and upwards in Leicester.

CENSUS 1901.

FEMALES.						Number of Persons Engaged.
Teaching	...	...	...	...	..	1025
Domestic Indoor Servants (not in Hotels, etc.)					...	4728
Charwomen	...	...	...	...	...	594
Laundry and Washing Service			...	...	...	803
India-rubber, Gutta Percha, Elastic Web Workers					...	335
Paper, Prints, Books and Stationery				..	...	1241
Hosiery Manufacture	...	...	...	...	...	9107
Other Textile Manufactures			...	...	...	1991
Tailoresses, Milliners, Dress-making, Shirt-makers, and Seamstresses	...	...	...	...	...	4492
Boot, Shoe, Slipper, Patten and Clog-makers					...	8791
Food, Tobacco, Drink and Lodging	...			...	...	3280
All other Occupations	...	...	..	...	...	5048
Total, Occupied						41,435
Retired or Unoccupied						47,756
Total, Occupied or Unoccupied						89,191

TABLE XVIII.

PRIMARY VACCINATIONS REGISTERED IN LEICESTER,
1881—1905.

PRIMARY VACCINATIONS.				Total Number of Births.	No. of Exemptions granted.
Year.	Public.	Private.	Total.		
1881	1,998	1,419	3,417	4,860	...
1882	1,710	1,396	3,106	4,856	...
1883	1,203	755	1,958	4,787	...
1884	994	769	1,763	4,921	...
1885	908	934	1,842	4,652	...
1886	611	511	1,122	4,857	...
1887	196	275	471	4,679	...
1888	72	242	314	4,787	...
1889	27	145	172	4,789	...
1890	12	119	131	4,699	...
1891	6	86	92	4,790	...
1892	12	121	133	5,816	...
1893	44	205	249	6,006	...
1894	29	104	133	5,995	...
1895	12	63	75	5,692	...
1896	19	67	86	6,212	...
1897	11	70	81	6,252	...
1898	12	80	92	6,152	...
1899	56	100	156	6,273	167
1900	155	188	343	6,207	598
1901	148	209	357	6,169	500
1902	770	467	1,237	6,313	1,500
1903	1,859	628	2,487	6,018	1,029
1904	753	529	1,232	5,981	1,044
1905	378	609	987	5,888	1,112

PART II.

ZYMOTIC DISEASES.

SMALLPOX.

It will be remembered that the Smallpox Hospital was closed in August, 1904. From that date no further cases of Smallpox occurred in the Borough until January, 1905, when two cases were notified, within a few days of each other, in two married sisters living in different parts of the town. Inquiry showed that they had both recently visited their sick mother, who lived at Rothley, outside the Borough, and whose illness was afterwards found to be Smallpox which had not at first been recognised as such. The usual precautions were taken, and although both women had families no further cases resulted.

At the end of February the disease again broke out in quite another part of the town, the patient being a man, aged 31, who had not been away from Leicester. It appeared clear that the man could not have been connected with the previous cases, and it is probable that he was infected by some tramp or wayfarer passing through, as he lived on one of the main thoroughfares leading into the town.

The next case occurred in the Union Workhouse, in a tramp who had only arrived in Leicester the day before; whilst the fifth and last case occurred in a commercial traveller, who had been travelling in various parts of the country.

In all five cases there is little doubt that the infection was imported. No spread occurred from any of them, and all made good recoveries.

All the patients had been vaccinated in infancy, but not re-vaccinated.

VACCINATION.

The total amount of vaccination performed in Leicester in 1905 shows a considerable shrinkage compared with the three preceding years. This was only to be expected, owing to the disappearance of Smallpox from the Borough.

It is interesting, however, to note that the decline was limited to vaccinations performed by the Public Vaccinators, private vaccinations actually showing an increase on the preceding year, the number being 609 in 1905, compared with 529 in 1904 (see Table XVIII.)

The following figures show the vaccinations registered during each quarter of the year 1905:—

		Public.		Private.		Total Vaccinations.		Exemptions Granted.
1st Quarter	...	88	...	160	...	248	..	252
2nd	..	108	...	125	...	233	...	305
3rd	..	92	...	148	...	240	...	290
4th	..	90	...	176	.	266	...	265
		378		609		987		1112

VACCINATION AND SMALLPOX.

As regards the well-worn subject of vaccination in relation to Smallpox, I can only say that, looking back, I see no reason to modify in any way the views I have expressed in previous reports. Indeed, the experience of other towns, since published, tends to strengthen and confirm those views. From all sides come reports of the spread of Smallpox by slight, *unrecognised* cases, such cases usually occurring in persons vaccinated many years before. Unrecognised cases in unvaccinated subjects are, proportionately, much less common. The explanation of this is obvious to those who believe that vaccination modifies the disease. This tendency of vaccination to conceal the true nature of Smallpox must militate to some extent against the effectiveness of modern methods of dealing with the disease, which depend essentially upon prompt recognition of each case as it occurs. This aspect of the question has not hitherto received much consideration, yet it is quite conceivable that in this way

vaccination, as at present practised, may to a large extent defeat its own object.

However that may be, it was certainly the case that the unvaccinated state of the population of Leicester did not play as great a part in the spread of the disease as I, in common with most other medical men, expected that it would.

The comparatively slight difference between the incidence of the disease on the vaccinated and unvaccinated sections of the population is very remarkable, though it is important to remember that in Leicester the vaccinated section is composed almost entirely of persons vaccinated many years ago.

If we assume, as I think we may do, that the vaccinal condition of the "other inmates" in households attacked by Smallpox is a fair index to the vaccinal condition of the population living in the invaded districts, then the following figures are of some significance:—

SMALLPOX IN LEICESTER, 1902-4.

Vaccinal Condition.	"Other Inmates" of Invaded Houses.		Number of Persons Attacked.	
	No. of Persons.	Percentage.	No. of Persons.	Percentage.
Vaccinated	... 785	41.2	304	42.5
Re-vaccinated	... 93	4.9	15	2.1
Unvaccinated	... 926	48.5	389	54.4
Had Smallpox	... 78	4.1	3	.4
Particulars unobtained	(25)	(1.3)	(4*)	(.6)
	1907	100.0	715†	100.0

The few recently vaccinated persons in the invaded houses, without exception, entirely escaped.

Before drawing any conclusion from the above figures some allowance should be made for the fact that the average age is very different in the vaccinated and unvaccinated sections.

* Vaccinal condition uncertain.

† This is the total number of cases occurring during whole outbreak.

Whilst calling attention to these figures, it is necessary, in order to prevent the possibility of misapprehension, to again assert my belief, amounting to absolute conviction, in the efficacy of *recent* vaccination in protecting *the individual* against Smallpox; and I would again point out that in combating the disease in Leicester I made the fullest use of vaccination in protecting persons exposed to infection, such as the Hospital and Sanitary Staff, and the inmates of invaded houses.

SCARLET FEVER.

The year 1905 proved to be an epidemic one for this disease, 1,117 cases being reported, with 36 deaths, giving a case mortality of 3·2 per cent.

The previous epidemic years, with the number of cases and deaths, were as follows:—

SCARLET FEVER—EPIDEMIC YEARS.

Year.		No. of Cases.		No. of Deaths.
1885	...	1816	...	113
1886	...	817	...	44
1892	...	1331	...	41
1893	...	2308	...	81
1896	...	2110	...	48
1897	...	1645	...	73
1899	...	1247	...	42
1905	...	1117	...	36

During the first part of the year the disease was no more prevalent than usual, but a serious increase occurred in the last quarter. The maximum for the year was reached in the second week in December, when 46 cases were notified. This was followed by a decrease until the end of the year, but the disease has continued very prevalent during the first quarter of 1906.

The actual number of cases during each quarter of 1905 was as follows:—

1st quarter	...	...	...	195 cases.
2nd	„	...	...	206 „
3rd	„	...	...	287 „
4th	„	...	...	429 „

Scarlet Fever is a disease which in every town is subject every few years to great exacerbations in prevalence. In the interim, it is never entirely absent, but it shows comparatively little tendency to spread. During the latter part of last year the disease appeared to be of a much more infectious type than we have experienced for several years. When introduced into a family it has spread to other members of the household more readily than during non-epidemic times. This is proved by the number of secondary cases which have occurred in houses already infected. Thus, in the last two quarters of 1904 the percentage of secondary cases was only 13·5, whereas in the last two quarters of 1905 the percentage was 19·8.

As additional evidence of the increased infectiousness of the disease, I may instance an outbreak which occurred at the Infirmary. The infection got introduced, in some way which was not definitely discovered, into the Children's Medical Ward, with the result that 11 patients, 6 nurses, a doctor, and a maid contracted the disease before it was eventually stamped out. That so many of the Infirmary Staff should have contracted the disease was very remarkable, especially as each case was promptly removed, as it occurred, to the Borough Isolation Hospital.

Another instance indicating the comparatively high infectivity of the disease was an outbreak which occurred in a large business house in the town, amongst the employees, all adults, who lived on the premises, with the result that five of them contracted it. It is rare for the disease to spread amongst adults.

No less than 739 of the cases, or 66 per cent., were removed to the Hospital, and such a large number necessarily threw a considerable strain upon the resources of that institution, especially during the last quarter of the year.

DIPHTHERIA.

The number of cases of Diphtheria notified was 173, and the number of deaths was 11. This is a slight increase on the previous year, but is satisfactory as compared with recent years, as shown below.

DIPHTHERIA IN LEICESTER.

Year.	Cases.					Deaths.
1895	75	...	...	36
1896	170	...	...	53
1897	229	...	...	73
1898	218	...	...	63
1899	892	...	...	222
1900	1452	...	...	316
1901	1034	...	...	155
1902	320	...	...	29
1903	211	...	..	28
1904	97	...	..	6
1905	173	...	...	11

Fortunately the disease was of a mild type, the case mortality for the whole year being only 6·3 per cent. Towards the end of the year, however, some increase in severity of type was apparent and this has continued, together with some increase in the number of cases, up to the time of writing (March, 1906).

TYPHOID FEVER.

One of the most satisfactory features in the statistics of the Borough during the last few years has been the comparative absence of Typhoid Fever.

Last year the number of cases which occurred was 68, whilst the number of deaths was only 9, this being the smallest number of deaths for over 25 years.

Below are the figures for the past ten years.

Year.	Cases.				Deaths.
1896	283	...	40
1897	215	...	38
1898	237	...	27
1899	162	...	28
1900	117	...	26
1901	126	...	20
1902	81	...	12
1903	58	...	13
1904	64	...	14
1905	68	...	9

It is reasonable to think that the great work of conversion of pail-closets into the more sanitary water-closets has helped to bring about this satisfactory improvement.

Further figures for this disease are given in Table XVI.

PUERPERAL FEVER.

The number of cases of this disease notified during the year was 20, and seven of these proved fatal.

In the previous year there were 16 cases, five of which proved fatal.

Eleven cases (out of the 20) were attended by a midwife, and nine cases by medical men. The cases were carefully investigated, the midwives being interviewed by the Medical Officer of Health and the necessary directions as to disinfection, etc., given. (See below, Midwives' Act.)

ERYSIPELAS.

The number of cases notified during the year was 253, and the number of deaths registered was 3. I have several times stated in my previous reports that very little, if any, practical advantage results from the notification of this disease. Erysipelas is not an infectious disease in the same sense that scarlet fever, smallpox

or typhoid fever is, and its inclusion with such diseases in the list to which the Infectious Diseases (Notification) Act applies is, in the opinion of many, quite unnecessary.

The following extracts taken from past Annual Reports for Leicester show the opinion held by previous Medical Officers of Health.

Dr. J. W. Crane, writing in 1875, said :—" I have visited all " the houses where it (Erysipelas) occurred, and have been " unable to discover any adequate cause for its existence: and " although it is considered to be infectious have met with no " cases that would corroborate the theory, although there can be " no doubt that traumatic erysipelas is so to a high degree." (Annual Report for 1874, page 9.)

Dr. H. Tomkins, in 1889, wrote :—" Three hundred and eight " cases of Erysipelas have been notified. Although at first sight " . . . the prevalence of Erysipelas appears to be alarming " in reality it is not so, for a very large proportion of these cases " are of the slightest character, frequently following some injury " or wound, and which have no significance from a sanitary point " of view as bearing upon the prevalence of zymotic disease." (Annual Report for 1888, page 19.) And again:—" Although 255 " cases have been notified, the majority of them have been of a " slight character . . . and the expense incurred in respect " of them is in no wise compensated for by any advantage " derived, either by the patients or by the Health Authorities." (Annual Report for 1890, page 17.)

Dr. J. Priestley wrote :—" 316 cases of Erysipelas have been, " notified. Sanitarily considered little or no good is derived " from the notification of Erysipelas, which might, therefore, " with advantage financially be discontinued." (Annual Report for 1892, page 24.)

With the above opinions I entirely agree. When I first came into office I used to have all the cases specially visited by the Inspectors, and a great deal of valuable time was taken up in doing this. As, however, it appeared that these visits were practically useless, and as so much other work of a far more important character required to be done, we have now ceased to visit these cases.

Whenever the Infectious Diseases (Notification) Act, 1891, is amended, it is certainly to be hoped that Local Authorities will be given the power of excluding this disease.

MEASLES AND WHOOPING COUGH.

Measles caused 53 deaths during the year, and Whooping Cough 50—practically all the victims being young children.

During the early part of the present year, 1906, the latter disease, I regret to say, has been very prevalent, and has caused a heavy mortality.

DIARRHŒA.

The epidemic of Diarrhœa in the summer of 1905 began in the middle of July and terminated towards the end of September, lasting ten weeks. It reached its height in the middle of August. The number of deaths occurring each week was as follows:—

Week Ending.	Number of Deaths.			Mean Weekly Earth Temperature (4 foot Thermometer).	
July 22nd	3	60·7	F
„ 29th	15	61·0	F
Aug. 5th	18	61·2	F
„ 12th	33	60·0	F
„ 19th	24	60·0	F
„ 26th	25	59·5	F
Sept. 2nd	25	59·0	F
„ 9th	18	58·5	F
„ 16th	15	57·7	F
„ 23rd	9	56·4	F
...	Total during Epidemic 185			...	

The total number of deaths during the epidemic was 185, and if we add a few deaths occurring before and since the epidemic, the total for the year is 211. Bearing in mind that the past summer was a hot one, the figures may be said to compare very favourably with past years. Thus, the average number of deaths in the past ten years was 267, and in the hot summers of 1895, 1897 and 1898, the numbers were 369, 360 and 325 respectively. Moreover, this is making no allowance for increase of population.

The distribution of the deaths in the different Wards of the Borough, in 1905, was as follows:—

WARD.	Census Population.	Number of Deaths.	Diarrhoea Mortality per 1000 Population.
Newton	10,330	34	3.30
Wyggeston	15,890	31	1.95
Latimer	17,275	31	1.79
St. Margaret's	12,639	17	1.35
The Abbey	18,116	23	1.27
Wycliffe	11,810	11	.93
The Castle	14,384	12	.83
St. Martin's	3,791	3	.79
Belgrave	13,849	10	.72
West Humberstone	15,717	11	.69
Spinney Hill	21,279	12	.56
Westcotes	16,752	8	.47
Charnwood	9,084	3	.33
De Montfort	7,907	2	.25
Aylestone	9,860	2	.20
Knighton	10,221	1	.10

Newton, Wyggeston, Latimer and St. Margaret's wards, as usual, suffered far more severely than the rest of the Borough, Newton Ward being much the worst. The average Diarrhoea mortality in Newton Ward for the five years, 1894-1898, was 3.20 per 1000 population, and for the five years, 1899-1903, it was 1.94. Last year, therefore, was a bad year in this ward. On the other hand, Knighton, Aylestone, De Montfort and Charnwood practically escaped. There was only one death in Knighton Ward, and only two in De Montfort. Aylestone also escaped with only two deaths, in a population of nearly 10,000, which is rather remarkable, as there is a large working class population in Aylestone, and in previous years this Ward has not come out quite so well.

A point of some interest is the size of the houses in which the deaths from Diarrhoea occurred. I find that—

47 per cent. were in houses of less than five rooms.

53 per cent. „ „ five or more rooms.

Before we can base any conclusion upon these figures it is necessary, of course, to consider the proportion of houses with less than five rooms existing in the Borough.

Now, according to the Census of 1901, there were 46,162 houses in Leicester, and of these 8181 were of less than five rooms.

This works out as follows :—

Houses with less than five rooms 18 per cent.

Houses with five or more rooms 82 per cent.

If, therefore, the Diarrhoea deaths were scattered uniformly throughout the Borough, we could say at once that there was a very excessive incidence upon the smaller houses. In the part of the town, however, where most of the Diarrhoea occurs, viz., the old central parts of the town largely contained in Newton, Wyggeston and Saint Margaret's Wards (shown in the map accompanying last year's Report), the proportion of small four-roomed houses is undoubtedly much higher than in the town as a whole, for there are practically no four-roomed houses in the

newer and better built districts. Unfortunately the census does not help here, so that how far there is really an excessive incidence upon the smaller houses we are unable to say. Judging from the above figures the difference is not likely to be great, and in any case the fact remains that more than half the deaths from Diarrhœa occur in houses with more than five rooms.

This bears out what I have often noticed, viz., that deaths from Diarrhœa are by no means confined to the lowest social class. Although poverty and degradation of the parents are undoubtedly very potent influences in predisposing to this disease, and although Diarrhœa is most prevalent in those districts where poverty and degradation most abound, still it very often carries off its victims from respectable working-class homes which apparently are quite up to the ordinary working-class standard.

The practical deduction from this is that Diarrhœa is largely a disease of *locality*, and that differences in the social position of the population, though very important factors, are not alone sufficient to account for the striking differences presented by the Diarrhœa rates of the different wards of the Borough.

Seventy-six per cent. of the deaths were in infants below the age of twelve months.

As regards the all important method of feeding, the old familiar fact is brought out that the great majority of the victims are infants who are artificially fed. Thus in 82 infants dying below the age of six months, only 15 were stated to be entirely breast fed.

The Sanitary Inspectress (Mrs. Hartshorn), who has investigated the deaths for me, gave special attention to the question as to why so few infants were breast fed. A variety of reasons was given, but in the majority of instances it was stated that the mother had not enough milk, or that it "went off." Out of 137 cases visited, it was found that the mother went out to work in 37 instances, whilst out of the 82 deaths of infants under six months the mother went out to work in 21 instances.

PHTHISIS

(PULMONARY CONSUMPTION).

In my Annual Report for 1904, I called attention to the very serious ravages caused by Phthisis in Leicester, and I stated that the high mortality from this disease was the most serious feature in the statistics for the year.

During 1905, I am glad to say, there was considerable improvement, the number of deaths from Phthisis being only 288 as compared with 353 in 1904, whilst the deaths from all forms of Tuberculosis (including Phthisis) were only 375 as against 449.

Welcome though this reduction is, the position of Leicester in regard to Tuberculosis during the past few years is not satisfactory.

AVERAGE MORTALITY FROM ALL FORMS* OF TUBERCULOSIS DURING PAST 25 YEARS.

Quinquennial Period.			Average Annual Mortality per 1000 living.	
1881-1885	...	...	...	1·81
1886-1890	...	...	...	1·77
1891-1895	...	...	...	1·72
1896-1900	...	...	...	1·66
1901-1905	...	..	..	1·72
(1905	...	1·64)		

It is seen from these figures that although there has been a steady decrease in mortality from 1881 to 1900, during the last five-yearly period there has been an increase. This is largely due to the excessive figures in 1904.

Before proceeding further it will be well to briefly mention what is already known concerning Phthisis.

* In making comparisons with former years, the deaths from all forms of Tuberculosis are more reliable than the deaths from Phthisis only, as errors due to differences in classification are thereby eliminated.

The disease has a characteristic age-incidence, persons being specially prone to it during the working years of life, whilst both young and old people alike are comparatively exempt. As regards sex, males suffer more than females. Clinically, the disease usually runs a very chronic course, beginning so insidiously that its real nature is often not suspected until it has existed many months. Its duration is very variable, lasting from six months to three or four years, or even longer: two or three years being probably an average. Our information as to its etiology is, unfortunately, still very far from complete. Its actual cause is the *Bacillus Tuberculosis*, but this can only operate in the presence of certain predisposing causes or favouring conditions. Although the disease frequently "runs in families," it is believed that it is never directly inherited, though a predisposition towards it may be. Recently the view has gained ground that the disease is often spread by direct infection from person to person, and that this largely accounts for the sequence of several cases in the same family. Consumption is more prevalent amongst indoor workers than amongst those whose occupation is in the open air, and it is now generally recognised that the breathing of an abundance of pure fresh air is both the best preventive of and the best cure for the disease.

Some trades and occupations suffer much more from consumption than others, the worst being those in which dust of a metallic, irritating nature is liable to be inhaled—*e.g.*, steel grinding. It has long been known that shoe-making is one of the bad trades as regards this disease, though the reason for this is not definitely known. Coal-mining, strange to say, is one of the good trades.

A cold, damp subsoil is believed to favour the disease, and marked reduction in Phthisis mortality has been known to follow important drainage works.

Owing to the great number of deaths caused by the disease, and to the fact that its victims are usually in the prime of life, it is justly regarded as a greater scourge to the race than any other disease, not excepting even cancer. Fortunately, the mortality from Phthisis throughout the country is showing a

tendency to decrease, and substantial improvement has taken place during the last half-century.

Coming now to the problem as it affects Leicester, I propose in this Report to consider it under the following heads:—

- (a) Age and sex.
- (b) Locality.
- (c) Occupation.
- (d) Family history.
- (e) The treatment of the disease at the Borough Hospital.
- (f) Other preventive measures.
- (g) Notification.

(a) *Age and Sex.*—The age and sex of persons dying from Phthisis during 1905 is shown in Table XX. As usual, there were more deaths of males than of females, although there are fewer males living. The excessive incidence of the disease upon males is better seen if we take the figures for the past five years.

INCIDENCE OF PHTHISIS UPON MALES AND FEMALES DURING THE FIVE YEARS 1901-5.

SEX.	Number of Persons living, Census, 1901.	Number of Deaths from Phthisis during the years 1901-5.	Quinquen- nial Rate per 1,000 persons living.	Average Annual Rate per 1,000 living.
Males	99,014	838	8.46	1.69
Females	112,565	612	5.43	1.08
Total, both sexes	211,579	1,450	6.85	1.37

Remarkable though this difference in mortality between males and females is, we cannot attach any local significance to it, as a similar difference is observed for the country as a whole, as the subjoined figures show:—

PHTHISIS MORTALITY. MALES AND FEMALES.

			1896-1899.		1901-1905.	
			Males.	Females.	Males.	Females.
England and Wales	...	1.52	1.14	1.47	1.04	
Leicester	...	1.26	.79	1.69	1.08	

(b) *Locality*.—The subsoil of Leicester is chiefly clay, and much of the town is low-lying, parts of it having been formerly liable to be flooded, but this is now prevented by the Flood Prevention Works carried out some 16 years ago.

(c) *Occupation*.—This is a very important consideration. In Table XVII. (p. 56) will be found the number of males and females occupied in various trades and occupations at the census of 1901.

The two staple industries of the town are the Hosiery trade and the Boot and Shoe trade, and these employed between them no less than 38,950 persons, or 23.5 per cent. of the total population over ten years of age.

At the beginning of this Report I showed that the Hosiery trade employed chiefly females, and the Boot and Shoe trade chiefly males, but that in both trades males were being displaced by females. Fortunately, however, this has been compensated for by the fact that an increasing proportion of males is being being employed in other trades and industries.

As regards the influence of occupation upon Phthisis, for several years the occupations of persons dying from this disease have been tabulated, and the figures for 1905 are shown in Table XX. In order to draw any conclusion from the figures at present available, it is necessary to confine our attention to the case of males only.

The figures for females are of no comparative value, because in the case of deaths of married women and widows the occupation is not stated, and in Leicester a large number of married women go to work.

DEATHS OF MALES (OVER TEN YEARS OF AGE FROM
PHTHISIS, IN LEICESTER, DURING PAST FIVE YEARS.

OCCUPATION.	No. of Males employed, 1901.	No. of Deaths of Males from Phthisis during past five years.	Annual Rate per 1000 males employed.
Boot and Shoe Trade ...	17,770	233	2.62
All other Trades ... (including Hosiery)	48,209	431	1.75
"Unoccupied or Retired"	10,270	116	2.26
Total	76,249	780	2.04

From the above Table we see that the mortality from Phthisis is distinctly higher in the Boot and Shoe trade than in other trades. In the class described as "Unoccupied or Retired" the mortality also comes out high, but this is of much less significance as this group is of rather a nondescript character, and includes (*a*) boys over ten years of age not yet going to work; (*b*) old men in workhouses, etc.; (*c*) pensioners; (*d*) retired business men. The 116 deaths attributed to this group include all deaths in which no occupation was given in the Registrar's Returns, but some of them may possibly have belonged to the occupied class.

The difference in mortality between the Boot and Shoe trade and all other trades, however, is not susceptible of any such explanation, and we are therefore driven to the conclusion that the higher figures in the Boot and Shoe trade must be attributed to what I have previously stated has long been recognised, viz., that boot-making is a trade which in some way predisposes to this disease.

In this connection it is interesting to note that at Northampton, where the Boot trade is also the staple industry, the Phthisis-rate is also unduly high in comparison with the low general mortality.

This leads us to consider the nature of the different processes carried on in the Boot trade.*

There are four principal processes in the business of making a boot, viz.:—

- (a) "Clicking," or "cutting out" the leather.
- (b) "Machining," or "closing in."
- (c) "Making" ("Rivetting" or "Lasting").
- (d) "Finishing."

Most boot factories are divided into departments corresponding to these, each department often occupying a separate floor, or portion of the factory. There are other lesser processes, such as cutting out the soles and heel making.

(a) "*Clicking.*" This consists in cutting out the various portions of the "upper" from the skin after it is received from the carrier. It is nearly always done by hand, the operative standing at a bench, leaning over his work, and using a short hand-knife for the purpose. The work is essentially of a sedentary nature. Comparatively little dust is produced in this process, but as the operative is constantly bending over the skin it was suggested to me that it was desirable to know if any injurious ingredient was used in the process of manufacturing or dressing the leather. I accordingly addressed an inquiry on this point to Professor Proctor of the Leeds University, an authority on the subject of leather, and it is satisfactory to learn from his reply (which has since been published in the "Boot and Shoe Trades Journal," and in which he enumerates the substances used by the trade) that he believes nothing is used which could be thought to be in any way injurious to the lungs.

(b) "*Machining.*" After the leather has been cut out by the "clicker," it is passed on to the "fitter" and "machinist," whose part it is to bring the pieces together to form the boot upper. This work is done by women and girls in the "machine-

* The following description has been kindly revised by Councillor J. W. Smith, of the firm of Hanger, Chattaway & Smith, Boot Manufacturers, Leicester.

room " by the aid of sewing machines. These machines, in all modern factories, are power driven, but a certain amount of the work is done by out-workers in their own homes by means of treadle-machines. Machining is necessarily close, sedentary work.

The sole of the boot is stamped out from the hide by means of a press. The operative stands at the machine. The number of hands required for it is not great. Heel making, or "heel-building" is chiefly done by youths, the leather being cut out and tacked together by machinery.

(c) "*Making*," or attaching the upper to the sole, is done by the "lasters." The operator stands at his work, which is now almost entirely done by machinery. There is now very little occasion for the old and objectionable practice of holding the tacks in the mouth. In large factories practically no brass rivets are placed in the mouth.

(d) "*Finishing*." This, as the name implies, is the last process in making a boot, and consists in paring the edges to a symmetrical shape, scouring, staining and polishing the sole and heel. For this purpose revolving knives, emery wheels, glass paper and circular brushes are used, and the men, known as "finishers," stand at their work holding the boot about breast high in front of them. Much dust composed of fine particles chiefly of leather with some of emery, etc., is generated in the process, and is removed by a fan connected by piping with a hood over the point of the machine where the generation of the dust takes place. Although every machine of this class, I believe, has this apparatus for dust removal fitted, the apparatus is apt to get out of order, or to have its efficiency impaired by faulty joints, choked pipes, etc. In some cases the design of the fan or hood is not very good. In any case, much care is required to keep the apparatus in perfect working order, and this it too often does not get. Familiarity breeds contempt, and both workmen and employers are apt to regard too lightly the injurious effect of habitually breathing dust. This is a matter which, I believe, the Factory Inspector frequently calls attention to.

The old style of finishing was done by hand and there is still a little of it carried on in a few surviving work-shops in Leicester. The operators used to sit on low stools, often many of them together, in comparatively small work-rooms. Extra gas burners were required for heating the burnishers, and these helped to make the atmosphere hot and stuffy. The boot was pressed firmly against the chest in order to steady it, and in the course of time the sternal and ribs were apt to get driven in to form a hollow, the condition thus produced being known as "boot-maker's chest." At one time this was quite a common deformity, and it is still seen in many of the older finishers.

Owing to the conditions under which it was carried on—the dusty nature of the work, the close atmosphere, and the cramped position—the old style of finishing was no doubt an unhealthy process. In Leicester it has now been almost entirely superseded by machine-finishing, which is certainly an improvement.

In considering the mortality from Phthisis in the Boot trade, however, it must be borne in mind that the great majority of the finishers now engaged at machine-finishing were formerly employed at hand-finishing, and it is reasonable to suppose that any injurious effects which the latter may have had upon their constitutions has not yet entirely disappeared.

To sum up this part of our subject, I see no reason why boot-making, as now carried on in modern, well-built factories, need be an unhealthy trade, but it is very important that ventilation should be made as perfect as possible, and that all dust-removing appliances should receive constant attention and supervision.

I am unable to give statistics showing the relative incidence of Phthisis upon the different departments of the boot industry in Leicester, as we do not know with any accuracy the number of hands employed in each department. There is also the difficulty that uncertainty sometimes exists as to which department persons dying from Phthisis belonged, owing to ambiguity in the statement made at the time of registering the deaths. Therefore, although a considerable amount of time has been spent in endeavouring to arrive at some conclusion from a

statistical point of view, I do not feel sufficient confidence in the figures obtained to publish them. I may say, however, that there appears to be no special incidence upon any particular department. At Northampton, the Census Authorities, at the request of the Town Council, made a special return as to the number of persons employed in each branch of the trade in that town, and on this basis the Medical Officer of Health, Dr. Beatty, has obtained some interesting statistics* which seem to indicate that in Northampton the heaviest incidence of Phthisis is upon the clickers. Hitherto, it has generally been supposed that finishing was the most unhealthy process.

If clickers really do suffer more from Phthisis than other boot operatives there is a consideration which must be borne in mind as a possible explanation. Clicking is generally regarded as lighter work than the other processes, and the clickers have sometimes been jocularly termed the "gentlemen" of the trade. It has been suggested that parents would try and get the more delicate and less robust of their sons into this branch just on account of this, and these boys would, we may presume, be more likely to develop the disease later in life. I do not know what force there is in this suggestion, but I give it for what it is worth.

THE QUESTION OF VENTILATION.

In considering the causes of Phthisis, we necessarily think first of ventilation. If boot and shoe factories were worse ventilated than factories where other trades were carried on, I should feel justified in pointing to this as a probable explanation of the higher incidence of Phthisis on this particular trade. But I do not think that there is any evidence that such is the case. In Leicester the majority of the boot factories are comparatively modern structures, built with due regard to light and ventilation, and some of them can even be described as "models." Whilst concluding, however, that inferior ventilation cannot be considered the cause of the special incidence of Phthisis on the boot and shoe trade in Leicester, I wish to be very emphatic as

* Published in a paper read at a Sessional Meeting of the Sanitary Institute, November 4th, 1905.

to the great importance of good ventilation in all factories if we are to reduce liability to this disease. Our knowledge of the prevention and cure of Phthisis makes this quite clear, and it is therefore our duty to do all we can to bring the fact home to the people. Unfortunately, in spite of all the sanitary preaching that has gone on in recent years, there is still a great deal of apathy amongst all ranks and classes of society as to the vital importance of fresh air. Boot and shoe operatives are not peculiar in this respect. But it is certainly the case that the means of ventilation provided in factories are not used nearly so much as they might and should be. The ventilation of a room, especially a large work-room, is a matter which requires constant attention and experience, but too often it gets little or none. The weather turns cold and windy, complaints are made as to the cold and draughts, and the windows and ventilators are closed. When the weather improves no one remembers to open them again, until perhaps the Factory Inspector comes round and complains of the bad ventilation. They are then opened, and for a time things are better, but the same repetition of events is only too apt to occur.

Often, also, one or two employees in a room, who dislike fresh air, will, by making complaints, prevent the opening of ventilators when the majority would be willing to have them open. We know exactly what happens in ordinary life—in a railway carriage, or restaurant, or at a public meeting. It is to be feared that it will be difficult to effect any very great improvement until the "Ventilation Sentiment" of the people becomes stronger. In the hope of stimulating this amongst factory operatives, the Sanitary Committee have had a notice printed setting forth in bold type the importance of fresh air.

[COPY OF NOTICE.]

THE IMPORTANCE OF FRESH AIR.

OVER 250 PERSONS DIE FROM CONSUMPTION in Leicester every year.

PERSONS WORKING IN FACTORIES are liable to suffer from Consumption to a much greater extent than those whose occupation is in the open air.

The open-air treatment is the best cure for Consumption, but PREVENTION IS BETTER THAN CURE, and it is much easier to PREVENT THE DISEASE BY NEVER BREATHING BAD AIR, than it is to CURE it afterwards with fresh air.

All employees in factories are urged for their own sakes to INSIST ON HAVING THE WINDOWS AND VENTILATORS OPEN, if only a little.

Never mind a slight draught. It is better to have too much fresh air than too little.

One person objecting to having windows or ventilators open may be the cause of a great number of other persons being SLOWLY POISONED BY BAD AIR.

If obliged to close ventilators during bad weather, do not forget to open them again when the weather improves.

REMEMBER, persons working in a close, vitiated atmosphere often fail to notice how bad the air has become.

EMPLOYERS are particularly advised to see that all windows and ventilators are set wide open during meal times. This is most important.

Issued by the Sanitary Committee,

Medical Officer of Health.

Sanitary Office, Town Hall, Leicester.

Copies of this, mounted on card, are being distributed to all factories where the managers are willing to have them exhibited. Already a large number have been issued, and I cannot but hope that they will accomplish some good in calling attention to this subject.

Of course, there are cases where structural alterations are required before it is possible to ventilate satisfactorily, and wherever this is the case it is to be hoped that attention will be at once called to it.

THE FAMILY HISTORY OF PERSONS SUFFERING FROM PHTHISIS.

Each case of Phthisis notified to us is investigated by the Sanitary Inspectress, and from the information she obtains I am

able to give the following particulars showing the number of instances where some member or members of the family or household has also suffered from the disease.

(1) Father or mother (in eight of these cases, a brother or sister had also been affected, but these are not included below) ...	39 instances.
(2) Uncle or aunt (no nearer relative) ...	41 „
(3) Brother or sister (in 14 of these more than one)	39 „
(4) Husband or wife	3 „
(5) Son or daughter	4 „
(6) Grandparent (in nine other instances grandparent as well as one of the above) ...	11 „
(7) Members of same household but not related ...	6 „
Total cases with some history ...	143
Cases with no history	99
Total cases investigated	242

Thus it appears that in 143 cases, or 59 per cent., some history was discovered, whilst in 99 cases, or 41 per cent., no history could be traced.

When considering the possible influence of heredity, (4), (5) and (7) must be excluded, and we then get 130 cases, or 54 per cent., in which heredity may have played a part.

The modern view, as I have before stated, is that in the case of Phthisis the actual disease is never inherited, but only the tendency or predisposition towards it. Much importance is being attached to the part played by personal infection in the spread of the disease, and many cases formerly ascribed to heredity are now being attributed to personal infection from one member of a family to another. There is some evidence both for and against this theory. In previous Reports I have quoted instances supporting it, but as it is possible the theory may be pushed further than is at present warranted, I will mention a fact that seems to tell a little against it. On the assumption that where two members of the same family (brothers and sisters) are

affected with phthisis it is the result of infection from one to the other, we should expect to find them more frequently of the same than of the opposite sex: for sleeping arrangements would necessarily bring boys into special and intimate contact with boys, and girls with girls. I have therefore investigated this, and, as far as the figures collected last year go, I find but little evidence of such being the case. Thus out of 50 brothers and sisters of patients, who had also suffered from phthisis, 26 were of the same sex as the patients, and 24 of the opposite sex, or practically equal numbers. These numbers by themselves are much too small to carry weight, but if confirmed they may help materially towards a solution of this most important question.

THE TREATMENT OF PHTHISIS AT THE BOROUGH HOSPITAL.

The experiment of admitting a limited number of patients suffering from Consumption into the Borough Hospital was begun in September, 1903. It has been twice interrupted for a few months on account of the prevalence of Smallpox in the Borough, but deducting these intervals the practice has now been in operation for about two years. Sufficient time has therefore elapsed for us to consider how far the experiment has been a success.

One ward block surrounded with balconies was set apart for the purpose, providing excellent accommodation for 18 patients—nine of each sex. Two glass shelters or “sun traps” were erected in the grounds and have been found of great service in winter.

At the outset, it is necessary to emphasise the fact that the object aimed at was *educational* rather than *curative*. It was realised that to attempt to cure cases, *i.e.*, to effect a permanent arrest of the disease, would mean that each case should remain under treatment for many months, and with the limited accommodation at disposal this would necessarily have restricted its benefits to comparatively few individuals. Following the example of the Corporation of Brighton, it was decided, in preference, to keep each case in hospital for a limited period only,

usually for one month, and thus to pass a comparatively large number of patients through the hospital. It was hoped that the practical object lessons which these would receive in the principles of hygienic open-air treatment, and in the method of preventing the spread of infection to others, would have a valuable educational influence upon them, and, through them, upon a larger circle of friends and relatives.

This plan has, to a large extent, been adhered to. Patients have been admitted on the understanding that they were coming for one month only, but in many cases where marked improvement has occurred, they have been allowed to remain for a second month. A few others, whose friends were willing and able to contribute* towards the cost of their maintenance in hospital, have been allowed to remain as paying patients for a third month, or even longer.

The total number of consumptive patients treated at the Hospital has been as follows:—

1903 (last 3 months)	...	...	61 patients
1904	...	...	120 „
1905	...	...	156 ..
<hr/>			
337			

This is exclusive of five patients who stayed less than one week.

The average duration of stay in hospital was 35.5 days, or five weeks.

As regards the condition of the patients at the time of admission, very little attempt was made to select cases, as is usually done at most working-class sanatoria. Consequently our cases were of all degrees of severity, patients only being refused if they were confined to bed or obviously hopeless. Almost all the cases had some consolidation of one or both lungs, whilst in a good many cases actual cavity-formation had already occurred.

As for the results obtained, the great majority of the patients improved very noticeably. This was evidenced by lessened cough and expectoration, improved appetite, and increase in weight and strength.

* The charge decided upon was 10s. a week.

The cases may be classified thus:—

290 patients increased in weight = 85·8 per cent.
(average gain 5·5lb.)

31 patients lost weight = 9·2 ..
(average loss 1·8lb.)

15 patients stationary or not stated = 4·4 ..

2 patients died = ·6 ..

338

The *immediate* effect, therefore, of the sanatorium treatment may be considered as very satisfactory, and certainly it was much appreciated both by the patients and their friends.

When we come to consider the permanency of the results, however, the report is less encouraging. Very many of the cases "go back" after leaving the hospital. This, of course, is only to be expected, for the following reasons:—

1. The late stage at which most of the patients come under treatment.
2. The shortness of their stay in hospital.
3. The fact that most of the patients have to return to their old life and surroundings and old occupations.

It is clearly recognised now that if Consumption is to be cured (*i.e.*, permanently arrested) the following conditions, speaking generally, must be observed:—

1. The cases must be brought under treatment whilst in an early stage (cases not in an early stage may indeed be cured sometimes, but the duration of treatment requires to be very much longer).

2. The cases must remain under treatment for a prolonged period. It is quite a mistake to imagine that even an early case of Consumption can be cured in a month or six weeks. It is true that patients often improve so quickly in general health and appearance that at the end of a couple of months both they themselves and their friends may easily imagine that they are cured. Such cases are able to go back to work, but they are not really cured, and sooner or later they will almost inevitably break down again.

3. They must not, as a rule, return to their old habit of life and indoor occupation, but must secure some suitable outdoor occupation.

Now, in most of the cases treated at the Groby Road Hospital, none of these conditions have been observed. In the first place, the cases do not come under observation early enough. This is chiefly due to the fact that working-class men and women put off consulting a doctor as long as they possibly can, too often until they are no longer able to continue at work. Secondly, the duration of their stay in hospital is much too short. The time required to obtain complete arrest of the disease is anything from three to twelve months or more. Thirdly, the majority of the patients have to return to their old occupations and surroundings.

Under these circumstances, to make any enquiry as to the permanency of the improvement effected is likely to be rather mis-leading. The patients, in almost all cases, have returned home with active disease still present, even though greatly improved, and it is, therefore, only to be expected that they will relapse sooner or later when removed from the favourable environment at the Hospital. Unless this is clearly understood beforehand, it is quite possible that our results may appear to some as disappointing, whilst in reality they are not so.

After this warning, I will proceed to consider the subsequent history of our patients after they have left us.

In November, 1905, I wrote to all those who had been under treatment during 1903 and 1904, *i.e.*, at least 11 months previously, enquiring as to their condition since returning home, their present state of health, whether able to work, etc.

There were 184 cases written to and replies were eventually received from 165.

These have been tabulated as follows:—

PATIENTS ADMITTED TO HOSPITAL IN 1903-4.

1. Patients able to return to regular work and still at work (average time at work since leaving hospital, 13 months)	...	...	...	39	=	21·2
						per cent.

2. Patients who describe themselves as improved since they left the hospital, but who have not returned to regular work	15	=	8.2
3. Patients about the same or worse than when they left the hospital	37	=	20.1
4. Patients who have died	74	=	40.2
5. Patients lost sight of	19	=	10.3
	<hr/>		
	TOTAL	184	100.0

The above is only a rough classification and requires some additional explanation.

In the first place very few cases, even in class 1, must be regarded as being cured. The great majority have only been "patched up." They are still suffering from Consumption and sooner or later they will almost certainly break down again and have to give up work.

In class 2, are a number of female patients who are engaged in domestic work at home and have no need to go out to work. These cases may live for a long time. A few state that they are able to work if they could get it to do. In class 3 there are many cases who have been able to do some work since leaving hospital but have not been able to keep at it regularly.

On the whole, taking the circumstances into consideration, I am of opinion that, even from the point of view of curing cases, the practice followed has achieved quite as much as could be expected from it.

I have said that the treatment in hospital is appreciated by the patients. This, I think, is shown by the following extracts from letters and post-cards received at the hospital from old patients or their friends:—

"I am feeling better now than I have done for three years. It done me a lot of good and I believe it has set me up so far."—W. H. B.

"I believe it set me up. I still follow the treatment."—Arthur G.

"I am better now. I have been different altogether since I left."—Emily K.

"Wonderfully improved since leaving the hospital."—F. G.

"Quite well since leaving the hospital. Have improved greatly."—Mary H.

"Pleased to say much better since I left the hospital. The nurses were most kind during the 8 weeks I was an in-patient."—Ivy S.

"Respecting my wife . . . I am sorry to say she has passed away . . . With regard to the effect the Institution had upon her: although she is dead, it did her a marvellous amount of good. Made her more cheerful, with a better appetite and more hopeful all together. But she was too far gone for cure on entering."—B. S.

"I must thank you for all your kindness. I was much disappointed not being able to stay longer as it did me so much good."—Mrs. A. H.

"I wish to thank you for the benefit I received during my stay at the hospital. I am much better and still improving."—E. C.

COST OF TREATING CONSUMPTIVE PATIENTS IN HOSPITAL.

The cost of treating consumptive patients at the Borough Hospital is very much less than would be the case at any sanatorium constructed specially for the purpose. The explanation is simple. At the Groby Road Hospital we already have an institution in working order, and the admission of consumptive patients makes but little addition to the establishment charges which constitute such a large proportion of the cost of every institution for the treatment of the sick. A medical officer, matron, engineer, stokers, porter, gardeners, cook, etc., have to be provided in any case, and rates, insurance, interest, and sinking fund remain the same.

Practically the only serious items of extra cost, so long as we utilise existing buildings, are the food (this is the chief item,

for consumptives require to be fed well), fuel, lighting, and wages of two nurses and a maid.

As regards the success of the treatment from the educational point of view, which, as I have already said, is the principal object, it is obviously impossible to express this in figures. That good has been achieved in the ways I have previously indicated I have little doubt. Many hundreds of people have visited the consumptives lying in the shelters in the open air, winter and summer, and have seen the condition of life at the sanatorium, the patients sleeping with their windows open, etc., and have noticed the improvement that has taken place week by week. The realisation of the importance and benefit of fresh air and hygienic surroundings in the treatment of consumption must also bring home the importance and benefit of the same conditions in the prevention of the disease. The patients moreover have been practically taught the need for simple precautions in controlling their expectoration, and every patient on leaving takes away with him a small pocket spittoon.

As regards the other preventive measures adopted in dealing with consumption, every case notified to us is visited by the Sanitary Inspectress, who gives personal instruction and advice. She leaves hand-bills, cards of instruction, etc., and where there is much expectoration she also leaves a pocket spittoon, if the patient is not already provided with one.

Disinfection of the patient's own home is carried out after admission to hospital, as also after a death from Phthisis.

THE NOTIFICATION OF PHTHISIS.

The voluntary notification of phthisis has now been in operation in Leicester since October, 1902, the same fee being paid as under the Notification Act.

The following figures show the number of cases notified during the three years that have since elapsed, and also the number of deaths registered, as the latter figure is an approximate indication of the number of cases which occur annually.

PHTHISIS.

Year.		Cases Notified Voluntarily.		Deaths Registered.	
1903	156	...	266
1904	182	...	353
1905	225	...	288

The system has been found to work well, and practically no friction whatever, as far as I know, has been caused by it.

Many sanitarians are coming to believe that the time is ripe for phthisis to be compulsorily notifiable, and already one or more towns, including the City of Sheffield, have obtained powers, under local Acts, to make it so. It will be very interesting to hear what their experience is. At present, whilst the arguments in favour of the proposal are very strong, there is also certainly something to be said against it. On the one hand there is the great desirability of getting to know of all cases at the earliest possible date, but on the other hand there are some serious practical difficulties and objections which do not exist in the case of other notifiable diseases.

TABLE XIX.

Table showing the Number of Deaths from Tubercular Diseases
in Leicester in the past Seventeen Years.

Year.	Phthisis.	Tabes Mesenterica	Tubercular Meningitis.	Other Tubercular Diseases.*	Total Tubercular Deaths.	Deaths per 1000 Popula- tion living.
1905	288	10	63	14	375	1·6
1904	353	8	78	10	449	2·0
1903	266	7	101	3	377	1·7
1902	272	9	77	0	358	1·6
1901	271	15	62	3	351	1·6
1900	230	8	91	45	374	1·7
1899	202	18	81	30	331	1·5
1898	221	17	83	37	358	1·7
1897	215	16	73	44	348	1·7
1896	220	10	69	44	343	1·7
1895	189	21	80	40	330	1·7
1894	207	14	59	31	311	1·6
1893	250	17	83	40	390	2·1
*1892	216	21	65	38	340	1·8
1891	181	11	34	24	250	1·4
1890	197	15	26	29	267	1·7
1889	178	21	13	23	235	1·5

* The figures after the year 1891 refer to the extended Borough of Leicester.

† The apparent diminution in the number of deaths from "Other Tubercular Diseases" since 1901 is due to an alteration in classification, many deaths being allocated to the other headings, chiefly to "Phthisis." This largely accounts for the apparent increase in "Phthisis" in recent years.

TABLE XX.

Age and Sex Distribution of Deaths from Phthisis in 1905.

Age Period.		Males.	Females.	Total.
0 to 10	...	9	8	17
10 „ 20	...	13	20	33
20 „ 30	...	46	33	79
30 „ 40	...	32	23	55
40 „ 50	...	30	24	54
50 „ 60	...	18	11	29
Over 60	...	12	9	21
Total	...	160	128	288

Occupations of Persons Dying from Phthisis in 1905.

	M.	F.		M.	F.
SHOE TRADE:			Butchers	...	3
Finishers	...	14	Framework Knitters	...	3
Clickers	...	12	Coachman	...	2
Riveters & Lasters	9	...	Barmen	...	3
Pressmen	...	3	Vanmen	...	2
Machinists	...	5	Cotton Winders	...	2
Warehousemen	...	5	Mechanics	...	3
Various	...	2	Stonemasons	...	2
Total in Shoe Trade	45	8	Printers	...	2
			Cigar Makers	...	1
Hosiery Trade*	...	2	Various (one example		
Clerks	...	6	of each)	...	18
Tailors	...	2	Occupation not stated		
Labourers	...	6	(includes Married		
Shopkeepers	...	5	Women, Widows and		
Teachers	...	1	School Children, and		
Warehousemen	...	3	persons of no occu-		
Porters	...	2	pation)	...	44
Grooms	...	2	Total	...	129

* A large number of married women are engaged in the Hosiery trade, but these are not included under this heading, for in the case of deaths of married women and widows, only the husband's occupation is registered.

TABLE XXI.

Deaths in each Ward from Phthisis during the Ten Years, 1896-1905.

No. of Ward.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	Total Deaths from Phthisis in 10 years.	Average Annual Mortality.
1. St. Martin's	4	4	8	1	2	0	3	6	7	5	40	1.05
2. Newton	10	15	7	7	20	21	5	7	18	20	130	1.25
3. St. Margaret's	11	12	17	17	15	6	17	21	27	24	167	1.32
4. Wyggeston	17	15	18	12	18	19	23	29	35	30	216	1.35
5. Latimer	24	15	24	14	18	31	19	26	35	26	232	1.34
6. Charnwood	9	14	9	10	7	8	6	10	16	17	106	1.16
7. *Wychfle	29	41	35	37	37	32	45	41	47	38	382	3.22
8. De Montfort	9	6	10	2	6	6	3	8	12	9	71	.89
9. The Castle	21	15	13	20	23	28	28	16	21	19	204	1.41
10. Westcotes	13	9	10	12	10	12	19	19	25	18	147	.87
11. The Abbey	7	6	9	18	14	21	17	14	19	19	144	.79
12. Belgrave	15	14	12	10	17	15	10	8	13	13	127	.91
13. +West Humberstone	16	20	15	17	15	25	18	15	19	14	174	1.10
14. Spinney Hill	19	17	19	15	18	25	25	22	25	15	200	.98
15. Knighton	7	5	9	4	6	9	19	6	10	7	82	.80
16. Aylestone	9	7	6	6	4	13	15	18	24	14	116	1.17
Total	220	215	221	202	230	271	272	266	353	288	2538	1.19
Workhouse	19	25	25	30	27	16	32	28	43	33	278	...
Borough Asylum	3	8	4	2	2	5	5	7	11	12	59	...
Infirmary	4	3	3	2	5	8	11	4	6	6	52	...

* Ward 7 includes Deaths at Workhouse. If these are subtracted, the rate for this Ward is .96.

† Ward 13 " " Borough Asylum. The Infirmary Deaths have been distributed to their respective Wards.

PART III.

GENERAL.

FACTORY AND WORKSHOPS ACT.

The number of workshops entered on our register is 807, exclusive of bakehouses. The number of visits paid to workshops during the year was 633, in addition to 85 visits to fried fish shops, and 248 visits to places where ice cream is made. The number of defects found, and for which notices were served, was 220, as shown in Table G in the Chief Inspector's Report.

Bakehouses.—There are 246 bakehouses in the Borough, only four of them being underground. The number of visits paid by the Inspectors was 414. The condition of the premises as regards cleanliness, lime-washing, etc., was reported to be fairly satisfactory.

Ventilation of Factories and Workshops.—This subject has already been dealt with under the head of Phthisis (see p. 80).

Home-work.—Many hundreds of names and addresses of out-workers doing "home-work" have been received from manufacturers in the Borough, in accordance with the provisions of the Act of 1901. The keeping of these lists, sorting out and forwarding names to other districts, etc., involves a great amount of clerical work, and in Leicester, as I have said in previous Reports, it has not been found to be of much practical value.

THE MIDWIVES' ACT.

The administration of this Act involves a considerable amount of extra work. There are 37 registered midwives practising in the Borough, and according to the provisions of the

Act, their case-books, records, and midwifery bags must be inspected from time to time. They have all been seen at least once during the year, and most of them more than once. Eleven cases of puerperal fever which occurred in their practice have all been carefully investigated, and three midwives have been summoned before the Sanitary Committee. The requirements of the Act as to the notification of still-births, and of the fact of sending for medical help, are being carried out fairly satisfactorily.

Some misunderstanding exists as to the significance of the term "registered midwife." At present the term implies no guarantee whatever that a woman is a *trained* midwife, as nearly all the existing midwives in Leicester availed themselves of the provision in the Act which allowed midwives of two years' standing to register on payment of a fee of ten shillings. As, however, in future only those will be allowed to register who have been adequately trained and passed the examination of the Central Midwives' Board, the term "registered midwife" will eventually become some guarantee of training and efficiency.

TRAINING OF MIDWIVES.

It was felt that some provision should be made locally for training suitable women who wished to become midwives. A committee of ladies interested themselves in the project, and collected about £400.

The Leicester Provident Dispensary was then approached, and agreed to take the matter up if sufficiently supported. The above fund was handed over to them, and both the County and Town Councils promised subsidies (in the form of scholarships), the former to the extent of £150, and the latter of £100. Four cottages adjoining the Dispensary in East Bond Street were converted into a small *Maternity Hospital* at a cost of £400, and about £250 more was spent in fitting it up. A matron, who is also a trained midwife, has been engaged, and resident pupils are received. The terms upon which women are received for accouchement are only 7s. 6d. per week, including medical attendance if necessary. Courses of lectures by medical men have been arranged, and pupils are also placed with reliable

midwives in order to be able to attend the requisite number of labours. Such an institution should be a great boon to many women amongst the working classes.

HOUSES UNFIT FOR HABITATION.

During the year 31 houses were certified by the Medical Officer of Health as unfit for habitation. The causes rendering the houses unfit, in nearly all cases, were dampness and general dilapidation. In one case there was a deficiency of light and ventilation, owing to obstruction by other buildings. Three of the houses, including the last mentioned, were closed* and placarded, whilst the remainder were repaired by the owners and made habitable.

The number of houses permanently closed in Leicester owing to unfitness for habitation is small, the explanation being that in the majority of cases where houses are condemned, the causes rendering the houses unfit can be removed if the owners are willing to spend a little money on them, which they generally are as soon as they find that the houses are in danger of being shut up.

THE WATER CARRIAGE SYSTEM AND "PAIL CONVERSION."

The greater part of the work of converting the pail closets in the Borough to water closets was completed a year ago, but a number of the more difficult cases remained. Most of these have been dealt with during the past year, bringing up the total converted since the work was begun, eight years ago, to 5,460.

It has been pointed out earlier in this Report that during the past few years there has been very little typhoid fever in the town, and although it is almost too much to hope that it will remain permanently at such a low level, we are justified in believing that the abolition of the comparatively insanitary pails has contributed to the decrease which has taken place.

* Since the above was written, the owner has thoroughly repaired one of the houses, and the Council has therefore allowed it to be again inhabited.

The business of conversion has involved a great amount of correspondence and numerous interviews with owners of property all over the town. This work has fallen almost entirely upon Chief Inspector Braley, to whose tact and perseverance, coupled with his unique knowledge of the town and of the various property owners, it is owing that it has been carried through with the minimum of friction or resentment, and at a very moderate cost.

SMOKE ABATEMENT.

The Royal Sanitary Institute, in conjunction with the Coal Smoke Abatement Society, held a conference on this subject in London in December, and Mr. Councillor Biggs and Chief Inspector Braley were deputed to attend on behalf of the Sanitary Committee.

In their report the delegates drew attention to the much shorter "time limit" which was adopted in many towns compared with that in Leicester, and they recommended, *inter alia*, that the present time limit should be reduced. All who wish to see Leicester remain as clean and healthy a town as it is at present will agree as to the great importance of minimising as far as possible the amount of smoke produced. At present, the Borough compares favourably as regards purity of atmosphere with most large manufacturing centres, but every year the town is extending, more houses and more factories are being erected, and the natural tendency is for the impurity and smokiness of the atmosphere to increase.

Another suggestion made was that of technical instruction for stokers. If this could be arranged it would undoubtedly be very beneficial. Stoking is really a fine art, and there is a great difference as regards smoke production between a good and a bad stoker. At the same time the stoker is often blamed for bad stoking when the real cause of a smoky chimney lies in deficient boiler power or defective appliances.

WATER SUPPLY.

Owing to the small rainfall, the year 1905 proved a very anxious one as regards the water supply of the Borough. The winter of 1904-5 was unusually dry, and in February, 1905, an

actual drought occurred, no rain falling between January 16th and February 19th. May was also a very dry month, less than half-an-inch of rain falling. As a result of this, the summer was begun with a very serious deficiency in the store of water in the reservoirs, and the greatest economy had to be exercised in order to prevent the occurrence of a water famine. The use of the Corporation water for flushing sewers and watering the streets was discontinued, non-potable water obtained from wells, etc., being used instead. The public supply was shut off for several hours during the night, and warning notices to the public enjoining strict economy were published. These and other precautions to prevent waste resulted in the consumption of water per head from the public supply being reduced to about 13 gallons per day. In addition, the public supply was augmented by well water pumped into the mains from deep wells sunk for the purpose. The water from the latter, though pure, was very hard compared with the upland surface water, which constitutes the bulk of the public supply and which is very soft. By these means the Water Committee succeeded in tiding over the hot months of the year.

The works in connection with the Derwent Valley Water Scheme are being pushed steadily forward, but it will be several years yet before the water can reach Leicester. When it does reach the Borough the water problem, so far as Leicester is concerned, will, thanks to the foresight and enterprise of those who are responsible for this scheme, be solved for very many years to come.

In the meantime an arrangement has been entered into with the Loughborough Corporation for a temporary supply of water (if required) from the new Blackbrook Reservoir, after the needs of Loughborough have been satisfied.

ALCOHOL AND PUBLIC HEALTH.

Although it has long been admitted that the abuse of alcohol exercises a most potent influence for evil upon the public health, causing directly or indirectly a great amount of ill-health, disease and death, local authorities generally are only now beginning to recognise that this is an evil which they, as the guardians of the Public Health, ought officially to recognise.

In the Report of the Inter-departmental Committee on Physical Deterioration, published during the year, the part played by alcohol was carefully considered, and the recommendation was made that local authorities should directly concern themselves with the evil, *e.g.*, by issuing warning notices to the public.

Acting upon this suggestion, a number of municipalities have issued posters calling prominent attention to the injury to health caused by the abuse of alcohol.

The following poster was issued by the Leicester Sanitary Committee:—

BOROUGH OF LEICESTER.

PHYSICAL DETERIORATION AND ALCOHOL.

The Report of the Committee on Physical Deterioration, presented to Parliament by command of His Majesty, calls attention to the following facts:—

THE ABUSE OF ALCOHOLIC STIMULANTS is a most potent and deadly agent of physical deterioration.

Alcoholic persons are specially liable to tuberculosis and all inflammatory disorders.

The figures show a large and in some cases an increasing number of admissions to Lunatic Asylums which are due to drink.

The tendency of the evidence was to show that DRINKING HABITS AMONG WOMEN are certainly growing, with consequences extremely prejudicial to their offspring.

Evidence was placed before the Committee that in ABSTINENCE is to be sought the best source of MUSCULAR VIGOUR and DEXTERITY.

The following facts, recognised by the Medical Profession, are published in order to carry out the recommendation of the Committee, and to bring home to men and women the baneful effects of Drinking Habits on Physical Efficiency:—

1.—ALCOHOL is NOT A FOOD, like milk or bread, but is really a DRUG, like opium or laudanum.

2.—It is a mistake to think that persons doing hard work require alcohol. The best work may be done without it.

3.—For healthy adults alcohol in any form is unnecessary. For healthy children it is generally decidedly injurious.

4.—The danger of alcohol is greatest if taken between meals and without food.

5.—Alcoholism is a chronic poisoning resulting from the habitual use, in excess, of alcohol (whether as spirits, wine, or beer), even though such use may never go as far as drunkenness.

6.—Alcoholism sooner or later ruins the health and induces the most varied and fatal disorders, including diseases of the stomach and liver, dropsy, paralysis, and insanity. It also paves the way to consumption, and complicates and aggravates most other diseases.

7.—Alcoholism impairs the efficiency of the worker, it leads to the neglect and loss of work, to POVERTY, MISERY, AND CRIME, and it has been the ruin of many a home.

8.—In short, alcoholism is the most terrible enemy to personal health, to family happiness, and to national prosperity.

REMEDY.—*The safest and only certain remedy for alcoholism is total abstinence.*

Issued by order of the Sanitary Committee,

THOMAS WINDLEY, *Chairman*.

C. KILLICK MILLARD, *Medical Officer of Health*.

Town Hall, Leicester, November 8th, 1905.

The idea is being rapidly taken up all over the country. Already similar posters have been issued by about 50 municipalities, and such is now the strength of the "temperance sentiment" in the country that it is probable that most towns will soon follow suit.

It is of considerable significance, in connection with this topic, to note that the present President of the Local Government Board is himself an earnest temperance advocate and a life-long abstainer.

PUBLIC SWIMMING BATHS.

The importance of public swimming baths from a public health point of view is now well recognised. Leicester is fortunate in possessing four good swimming baths, and the extent to which each has been used during the past year is shown in the adjoining table.

The Baths Committee have again decided to grant the exclusive free use of the various baths and gymnasia during certain school hours for the purpose of instruction in swimming and gymnastics to a portion of the boys and girls attending the elementary schools in the Borough. The children are taken to the baths in the charge of responsible teachers, and the Education Committee pay for the maintenance and washing of the towels, etc., required.

PUBLIC BATHS.

NUMBER OF VISITORS DURING THE YEAR 1904-5.

DESCRIPTION.	Bath Lane Baths.	Vestry Street Baths.	Belgrave Road Baths.	West Humberstone Baths.	Total.
Swimming Baths	30,795	44,651	35,869	31,468	142,783
Ditto Children out of School Hours...	6,321	2762	4712	2181	15,976
	BOYS.	BOYS.	BOYS.	BOYS.	BOYS.
	6,449	4,427	3,249	3,214	17,339
Ditto Children during School Hours	GIRLS.	GIRLS.	GIRLS.	GIRLS.	GIRLS.
	5,688	4,084	2,694	3,658	16,124
Slipper Baths	22,071	41,982	9,870	.....	73,923
Spray Baths .. .. .	.....	.....	.....	10,115	10,115
Gymnasium	7,473	.....	11,918	12,304	31,695
Ditto Children during School Hours	5,300	.....	5,475	5,175	15,950
Total	84,097	97,906	73,787	68,115	323,905
<p><i>Summary.</i>—Total number of Visitors during the year (1904-5) ... 323,905</p> <p>[Previous year (1903-4) ... 277,307]</p> <p>In addition to the above, 10,807 persons visited the Bedehouse Meadow and Abbey Meadow Open-air Bathing Stations. Only persons paying for bathing drawers are counted, the open-air bathing stations being free.</p>					

INFANTS' MILK DEPOTS.

The question of the provision in Leicester of a municipal infants' milk depôt has occupied considerable attention during the year. A deputation from your Committee visited a number of other towns where depôts are already in existence, and presented a report, of which the following is a summary.

The places visited were Battersea, Finsbury, Liverpool, St. Helens, Leith and Glasgow. At Finsbury, the depôt is at present managed by a private philanthropic society, and they obtain their milk (from a model dairy) ready prepared and bottled. At the other places mentioned the depôts are municipal institutions and the general plan of procedure adopted is as follows:—

A supply of milk, obtained by contract from some reliable dairy, under special conditions as to care in collection, cleanliness, and quality, is brought each day to the depôt where it is strained and "humanised." This is done by the addition of definite quantities of cream, sugar and water, to approximate it in composition to human milk. The quantities and also the modification vary according to the ages of the children for whom it is intended.

After modification, the milk is bottled, special stoppered bottles being used, and bottling machines, specially designed for rapidly filling a number of bottles simultaneously, being employed. After bottling, the bottles are placed in the steriliser (a chamber into which steam under pressure can be admitted) and heated up to a given temperature for about 20 minutes. The bottles are then removed from the steriliser and quickly cooled down by immersion in a tank of cold water. After cooling, the bottles are ready for distribution. They are supplied to the public in wire baskets, each holding from 6 to 9 bottles and containing a 24 hours' supply. After use the basket of empty bottles is returned and a fresh supply obtained. Usually the supply for Sunday is given out on Saturday.

Before any child begins to be fed from the depôt the mother is warned that the milk is only to be used if breast feeding is absolutely impossible. Certain particulars are taken

down and entered in a register, *e.g.*, name, address and age, state of health of child, weight, reason for trying the depôt milk, etc. A record of each child is kept, giving particulars from week to week.

Full directions as to the proper way of using the milk are issued to the parents when they first begin with the milk. All that the mother has to do, when the correct feeding time comes, is to place an unopened bottle in a jug of warm water for a few minutes, then remove the stopper and apply a teat (supplied from the depôt) to the bottle from which the child draws the milk direct. All danger arising from dirty feeding-bottles is thus obviated.

In the smaller depôts the milk is all distributed direct from the depôt, the front room serving as a retail shop. In the larger depôts however, as at Liverpool and Glasgow, distributing centres have been provided in other parts of the town also, to which the bottled milk is sent and there retailed. Arrangements have also been made with ordinary milk-sellers to sell the depôt milk on commission. There are some objections to this latter plan, as it is found much more difficult to exercise proper control over the milk sold in this way, or to follow up the subsequent history of the infants.

The price charged for the milk is a very important consideration. The prices charged in several of the depôts are 3d. for a day's supply (1s. 6d. per week) for children under 6 months of age, and 4d. for a day's supply (2s. per week) for older children. This price covers the actual cost of the milk, cream and sugar supplied, but does not nearly cover the maintenance charges of the depôt, such as wages, rent, taxes, etc., so that there is nearly always a considerable deficit on the working of a depôt. In order, however, to bring the milk still more within the reach of the poor, some towns, *e.g.*, St. Helens and Glasgow, have reduced the charges from 3d. and 4d. a day to 2d. and 3d. Even at this price, however, it is found that many of the very poor are unable to afford it. As it is just this class which it is most desirable to induce to use the milk, the financial obstacle becomes a serious one; it is, indeed, probably one of the chief difficulties in the way of making a depôt a real success.

Conclusion.—The conclusion arrived at by the deputation was that it was desirable to open a milk depôt in Leicester.

Conference with Medical Men.—After receiving this report it was decided by the Sanitary Committee to invite the medical men in the Borough to a conference to consider the question, as it was realised how important it was to secure the co-operation and support of the medical men. The conference was held in the Council Chamber, and about 30 medical men attended. The general feeling expressed was strongly in favour of the proposed scheme. The Committee accordingly decided to open a depôt during the forthcoming summer, but it was thought desirable in the first instance to obtain the milk ready prepared and bottled from some reliable firm of dairymen, as is done at Finsbury.

Possible Objections to Sterilised Milk.—One question was raised at the Conference which it is desirable to refer to as it has sometimes been urged as an objection to infants' milk depôts, *viz.*, the possibility of scurvy or rickets being caused by the continued use of sterilised milk. This is a question which is now being debated in the medical world, independently of infants' milk depôts, and therefore it would be unwise to give a dogmatic opinion. It is possible that there is an objection, on theoretical grounds, to the continued use of sterilised milk, but in practice I think we may say that the danger, if it exists, is very slight. Sterilised milk has now been used for many years, and on a large scale; great numbers of perfectly healthy children have been brought up on it, and it is only very occasionally that any bad results of the kind indicated have ever been alleged against it, and then it has been largely a matter of surmise. At the various infants' milk depôts which have been in existence for some time, and where sterilised milk has been issued wholesale, practically no trouble of this kind appears to have been experienced. It is important, also, to point out that in the case of an infants' milk depôt, the milk, which only requires to be kept a comparatively short time, need be only partially "sterilised," so that the composition of the milk is but slightly interfered with.

CREMATION.

It is now four years since the Leicester Corporation Crematorium was erected, and it is satisfactory to find that the more

sanitary method of disposal of the dead is making headway, although not quite so rapidly as it was hoped by some would be the case.

The number of cremations which have taken place each year is here given :—

Year.				Number of Cremations.
1902	...	...	...	1
1903	...	...	...	5
1904	...	...	...	8
1905	...	...	...	15

A good many of the above were the cremations of persons not belonging to Leicester, and almost all were of persons of education and position. During the present year (1906), however, a cremation has taken place for the first time in the case of a working-man, and it is to be hoped that this example will be followed. The expense of cremation is not great. The fee for the actual cremation is only two guineas in the case of residents in Leicester, and even this the Corporation are willing to remit if sufficient reason be shown. It is true there are also the extra medical certificates to be paid for, and at present this fact rather unfairly handicaps cremation, for with earth burial no real certificate of death is required, but merely a formal certificate of the *supposed cause* of death, for which no fee is chargeable. On the other hand, a saving can be effected on the cost of the grave, for, if desired, the ashes will be disposed of by the Cemetery Authorities in a reverent manner without extra charge.

It is not, however, a question of cost, but one of sentiment, that prevents cremation from being more frequently resorted to. It will necessarily take time to modify this. That it is being modified, the steady progress which cremation is making in this and other civilised countries is sufficient proof. Ultimately it is quite possible, if not probable, that it will be sentiment that will make cremation the prevailing method of disposal, for, looking at the question dispassionately, apart from all preconceived ideas and traditions, it is obvious that for the body to be resolved into its elements by the purifying action of fire in the short space of forty minutes is less repugnant to the feelings than for the same

inevitable process to be accomplished in almost as many years by the slow process of putrefaction with all its attendant horrors.

The number of British Crematoria has rapidly increased during the last few years. The one at Gilroes was the seventh to be erected in this country, but five others have since been opened, making now thirteen. Five of these—*viz.*, the Hull, Leicester, City of London, Bradford and Sheffield Crematoria—are municipal enterprises. The remainder belong to private companies.

DEATH CERTIFICATION AND PREMATURE BURIAL.

Reference has incidentally been made to the contrast between the careful and detailed death certification required before cremation, and the perfunctory certificate which at present is all that is required before ordinary burial. It has for some time been felt that the whole question of death certification urgently calls for revision. The present system, under which medical men give certificates of death which are not certificates of the *fact* of death but merely of the *cause* of death, is eminently unsatisfactory. Probably many people are unaware that doctors are under no obligation even to inspect the body before signing the death certificate, and usually do not do so, unless they happen to be present at the time of death. What happens is that the friends come and inform the doctor that the patient has died, and ask for the certificate, which the doctor thereupon gives them.

The certificate is in the following form :—

“MEDICAL CERTIFICATE OF THE CAUSE OF DEATH.

“I hereby certify that I attended *John Jones* during *his* last illness; that such person’s age was stated to be *21 years*; that I last saw *him* alive on the *11th* day of *January, 1905*; that he died *as I am informed* on the *12th* day of *January, 1905*, at *7 Blank Street, Leicester*, and that to the best of my knowledge and belief the Cause of *his* death was as hereunder written.” (Then follows the cause of death, and the signature of the medical man).

It sometimes happens, especially in the case of chronic disease, that the medical attendant has not seen the deceased for

some days or even weeks prior to death, but he is still competent to sign the death certificate. The explanation of this very loose and unsatisfactory state of things, which medical men themselves recognise as clearly as anyone, is that the obligation of giving a certificate of the *cause* of death has been laid upon them, but without any fee or remuneration. The duty of certifying as to the *fact* of death has not been laid upon them, and unless provision be made for paying them for the extra work which this would involve, it is unreasonable to expect that medical men should be called upon to carry it out. In country districts, where the medical man lives at a distance from the patient, the time involved in visiting to examine the body after death would be considerable.

Premature Burial. Consideration of the present loose system of certification leads us to the question of Premature Burial. Undoubtedly there are many people who have a great dread of being buried before they are really dead, and a society exists, under the title of "The London Association for the Prevention of Premature Burial," which seeks to render such a thing impossible. This society has collected records of several cases of persons apparently dead coming back to life after preparations for the funeral had already been begun, and in a few gruesome instances of persons being actually buried alive. Although it is probable that such occurrences are extremely rare, their possibility, under the existing state of things, has been fully proved and amply justifies the efforts which the society in question is making to have the fact of death verified before burial.

VISIT OF THE BRITISH MEDICAL ASSOCIATION TO LEICESTER.

One of the events of the year was the visit of the British Medical Association, which held its Annual Meeting at Leicester in July and received a cordial welcome from the Mayor on behalf of the Corporation. A large number of medical men attended from all parts of the Kingdom. In the section of State Medicine several subjects of special sanitary interest were discussed, notably Infants' Milk Depôts, Sanatoria for Consumptives,

the Influence of Alcohol on Public Health, and the Hospital Isolation of Scarlet Fever. The two first were warmly advocated, whilst at the close of the discussion on the last-named subject a resolution was carried requesting the Local Government Board to institute a full enquiry into the whole question of hospital isolation.

As regards the social side of the gathering, there was no lack of hospitality, the people of Leicester, led by the Mayor (Mr. Alderman Hilton), doing their utmost to entertain the visitors. The Meeting was pronounced a great success and I trust it has done a good deal towards enhancing the reputation of the town in the eyes of the medical world.

APPENDIX I.

CHIEF INSPECTOR'S REPORT

UPON THE

WORK OF THE SANITARY DEPARTMENT

DURING 1905.

TO THE MEDICAL OFFICER OF HEALTH.

Sir,—I beg to submit my Annual Report of work done in the Sanitary Department during the year 1905. Particulars as to the nature and number of nuisances abated will be found in the appended Tables.

I am, Sir,

Your obedient servant.

FRANCIS BRALEY, *Cert. San. Inst.*,

17th March, 1906.

Chief Inspector.

REPORT FOR 1905.

During the year the usual house to house inspection has been carried on and 20,659 houses have been inspected; in the previous year the inspection had been greatly interrupted and only 16,227 houses were inspected.

338 articles were purchased under the sale of Food and Drugs Acts and analysed by the public analyst—viz., Milk 174, bread 12, flour 6, butter 83, margarine 1, coffee 18, mustard 4, ale 6, spirits 10, cheese 12, cream of tartar 4, sweet nitre 4, camphorated oil 4. Of these samples 9 milks and 5 butters

were certified to be adulterated. The vendors of two samples of milk were each fined 10s. and costs; the case against another vendor of adulterated milk was withdrawn, the defendant producing a warranty; and six others were cautioned by letter from the Town Clerk or by the Committee. The vendors of two samples of adulterated butter were fined 40s. and costs and 20s. and costs respectively, and three others were cautioned by the Committee.

Proceedings were instituted against a butcher for exposing four pieces of beef for sale which were unfit for human food: he was fined £20 or a month's imprisonment. Three other persons were similarly charged: one was fined 40s. and costs, another 20s. and costs, the third was dismissed. A case against a butcher for exposing for sale the carcase of a calf which was unfit for human food was dismissed, the chairman, after a lengthy consultation with his brother magistrates, saying there was a doubt in the case. Another butcher was summoned for exposing for sale the carcase of a pig which was wet, flabby, emaciated and dropsical: he was fined £5 and costs.

For having in his possession and exposed for sale in the public street a quantity of putrid fish, a fish hawkers was fined £10 or a month's imprisonment.

Proceedings were taken against a man for having in his possession for the purpose of sale and intended for the food of man, eight pieces of pork which were unfit for human food: the defendant was sentenced to two months' hard labour.

For depositing for the purpose of sale, a beast's belly and heels which were unfit for the food of man, a butcher was fined £3 3s. and costs.

During the year, 115 canal boats have been inspected: no case of infectious disease was found on them. The number of persons occupying the 115 boats was 326, viz.—182 men, 74 women, 38 children over five years of age, and 32 under five years.

STATEMENT A.

Showing the work done by the Sanitary Staff during the
Year 1905.

	No. of Visits.
House to House Inspections	20,659
Special Inspections and Investigations of Complaints	18,822
Re-inspections to ascertain the progress of Sanitary and Informal Orders	16,835
Visits in connection with Contagious Diseases ...	6,491
Visits to Common Lodging Houses	720
Visits to Bakehouses	414
Visits to Canal Boats	115
Visits to Workshops	633
Visits to Fish Shops	85
Visits to Caravans	127
Visits to Ice Cream Shops	248
	<hr/> 65,149 <hr/>
Samples of Food, &c., purchased for Analysis under Adulteration Acts	338
Samples of Well Water submitted for Analysis ...	1
Observations for the purpose of Smoke Prevention ...	1,452
Stacks reported for Smoke Nuisance	55
Houses Disinfected by the Sanitary Staff	1,724
Swine reported to Medical Officer of Health ...	80
Filthy Houses ditto ditto	78
Dilapidated Houses ditto ditto	38
Prosecutions under the Public Health and Local Acts	6
Ditto ditto Food and Drugs Acts ...	6
Houses to which Smoke Test was applied	938
Public Buildings, Factories, &c. ditto	15
Houses to which Liquid Test was applied	194
Public Buildings, Factories, &c. ditto	11
Visits to Dairies and Milkshops	753
Letters (including Complaints of Nuisances) received	3,213
Letters (including School and Sanitary Notices) sent out from the Offices	6,300

STATEMENT B.

During the year Formal and Informal Notices have been served
to abate Nuisances as follows.

	No. of Orders.
To abolish Manure-pits and Ash-pits	179
„ repair ditto ditto	2
„ provide Ash-bins	1,597
„ „ Pail Closets	8
„ erect new Water Closets	28
„ repair, alter, or rebuild Closets	2
„ fix Closet Hoppers and Syphons	80
„ fix Flushing Apparatus and lay on Water Supply	61
„ repair ditto and ditto	55
„ alter and ventilate Soil Pipes	3
„ stop up or disconnect Cellar Drains	3
„ lay New Drains	1
„ relay or repair Defective Drains	184
„ clear Choked Drains	467
„ cleanse or repair Cisterns	23
„ fix lead or iron Sink Wastes	25
„ fix Traps or Gully Gratings	107
„ reset Gullies or provide new Gratings	64
„ erect, alter, screen, or repair Urinals	14
„ repair, re-hang, or provide new doors for Closets and Dwellings	33
„ repair, renew, and make good Spouting	187
„ cleanse and linewash Closets and Passages	137
„ pave Yards and Passages, or repair Paving	241

STATEMENT B.—Continued.

	No. of Orders
To provide new or relay and repair Floors	92
„ repair Roofs	108
„ cleanse and limewash Houses	474
„ ventilate Dwellings	6
„ remove Manure and Offensive Matter	7
„ remove Animals kept in such a condition as to be a Nuisance	24
„ alter Chimneys and Miscellaneous	240
„ reduce Number of Persons occupying Houses ...	17
„ repair Staircases	12
„ fix 4-inch Ventilating Pipes	18
„ repair Walls	93
„ insert Damp Proof Courses	57
„ alter or repair Rain Water Pipes	36
	<hr/>
	<u>*4,685</u>

* The 4685 Defects ordered to be remedied were contained in 3738 Notices,
and of these 359 were Formal and 3379 Informal Orders.

STATEMENT C.

Showing the number of Offensive Trades carried on, and Registered and Licensed Premises within the Borough requiring the constant attention of the Inspectors.

DESCRIPTION OF TRADE.							No.
Slaughter Houses (Registered)	...	...	..				78
„ „ (Public)	...	...	...	...			18
Tripe Houses	...	...	...	...	...	...	33
Common Lodging Houses	...	...	...	...			33
Bakehouses	...	...	.	...	...	...	246
Cowsheds	...	...	...	...	...	...	47
Milk Shops and Dairies	...	...	...	...			840
Tallow Melters	..	...	...	...	...	...	1
Chemical Works	...	...	..	...	..		2
Tanners and Fellmongers	...	..	..	...			1
Bone Boilers	...	...	...	...	...	...	2
Knacker's Yard	...	...	...	...	...	..	1
Gut Scrapers	..	...	...	...	...	...	2

STATEMENT D.

Showing the number of Visits made by the Inspectors of Meat, and the quantity of Meat, &c., condemned during the year 1905.

Number of visits to Slaughter Houses, Shops, and Cowsheds, etc.	..	...	...	...	..	10,774
Number of visits to Cattle Market	...	...	...	...	...	301

MEAT, ETC., CONDEMNED AND DESTROYED.

					Tons.	Cwts.	Qrs.	Lbs.
Meat	...	...	...	..	27	19	2	23
Fish	...	...	...	...	14	0	0	6
Fruit	...	...	...	...	1	0	1	24
Vegetables	...	...	..	...	16	14	3	8
Rabbits	...	...	...	..	...	...	1,573	Head
Preserved Foods	...	...	...	...	...	...	1,099	Tins
Partridges	...	...	...	...	...	...	55	Head
Poultry	...	...	...	...	...	...	217	..
Black Grouse	...	...	...	...	...	...	80	..
Wood Pigeons	...	...	...	...	...	...	15	..
Eggs	...	...	...	...	...	...	1,120	
Rooks	...	...	...	...	...	...	216	Head
Hazel Hens	..	...	...	...	...	...	178	..
Hares	...	...	...	...	...	...	51	..

STATEMENT E.

Showing the Localities of Sewer Gas Escapes.

	No.
Into Breakfast Rooms, Sitting Rooms, and Dining Rooms	4
„ Houses from Rat Holes	11
„ Kitchens and Sculleries	11
„ Basement Kitchens and Cellars	19
„ Lobbies and other parts of Houses	7
„ Internal Water Closets	8
„ External Water Closets	95
„ Yards, from around badly set Gullies, Defective Drains, &c.	130
From External and Unventilated Soil Pipes	11
„ Head and joints of downright Rain Water Pipes	22
„ Untrapped Rain Water Cisterns	7
„ Gullies in Stables	1
„ Ventilating Pipes	12
	<hr/> 338
And in connection with Houses in which Infectious Disease has arisen	210
	<hr/>
TOTAL	<hr/> 548 <hr/>

STATEMENT F.

In connection with Infectious Diseases Inspection, the following defects were found, either in the houses referred to in the certificates, or in the houses, closets, &c., in the same yard.

	No.
Defective and Foul Ashpits	45
„ and dilapidated Closets	1
„ and choked Drains	35
„ and unventilated Soil Pipes	1
„ Urinal, Bath and Lavatory Wastes . . .	3
„ Paving and Surface Channells	16
„ Untrapped or badly set Gullies to Sink and Yard Drains	50
„ Cellar Drains (direct to Sewers) .. .	2
„ Water Closet Hoppers and Flushing Apparatus	20
„ Spouting .. .	5
Foul Brick and defective Shafts to Sinks	17
Foul and defective Rain Water Cisterns	10
Filthy Urinals, Closets and Passages	6
Filthy Houses	46
Escapes of Sewer Gas into:	
External Closets	44
Living Rooms and Sculleries	4
Yards, from defective Drains, badly set Gullies, or Rain Water Pipes connected direct with the Sewers or Drains	162
	<hr/> 467 <hr/>

STATEMENT G.

In connection with the Inspection of Factories and Workshops,
the following sanitary defects have been found, and Formal and
Informal Notices served.

	No. of Orders.
To abolish Mammre and Ash-pits	5
.. provide Ash-bins	10
.. erect New Water Closets	24
.. fix Closet Basins and Syphons	10
.. repair Flushing Apparatus and lay on Water Supply	6
.. alter and ventilate Soil Pipes	2
.. re-lay or repair defective Drains	7
.. clear choked Drains	9
.. fix Traps or Gully Gratings	15
.. erect, alter, screen, or repair Urinals	9
.. provide new, or relay or repair Floor	27
.. repair Roofs	6
.. cleanse and linewash Workshops	63
.. repair Walls	2
.. fix 4-inch Ventilating Pipes	12
.. provide Light and Ventilation	10
Total	<u>220</u>

APPENDIX II.

ISOLATION HOSPITAL REPORT FOR 1905.

The total number of patients admitted during the year was 1,037. viz.:—

Scarlet Fever	...	...	739	cases
Diphtheria	...	...	89	..
Enteric Fever	...	...	43	..
Phthisis	...	..	157	..
Various	...	..	4	..
Smallpox	...	...	5	..
Total	...	...	1037	..

The number is the largest we have had to deal with for the past four years, and it is due to the large number of scarlet fever cases. In Table B the number of cases of the different diseases admitted to hospital during the five years since the new hospital was opened is shown, and it is interesting to notice how the proportion of the different diseases varies. Thus in 1901, the first year after the hospital was opened, no less than 592 cases, or more than 50 per cent of the admissions, were diphtheria. In 1903 and 1904 the numbers were chiefly made up with smallpox cases, owing to the epidemic of that disease, whilst last year scarlet fever was the prevailing disease. In the last three years, however, a fresh disease has figured in our returns, viz.,—phthisis, which we began to admit in 1903.

SCARLET FEVER.

Owing to the prevalence of this disease in the Borough during the last few months of the year, the number of admissions steadily rose until at the end of the year the number remaining

under treatment was 132. This number was greater than we have had to deal with for some years, and it necessitated the temporary cessation of the treatment of female consumptive patients at the hospital.

The type of the disease was slightly more severe than has been experienced for some time, 20 of the cases proving fatal, equivalent to a fatality of 2·7 per cent. Particulars of the deaths are shown in Table C. Ten of the fatal cases died within four days of admission, and one of them died within a few hours. One fatal case was complicated with tubercular meningitis, another with chorea, and a third—a male, aged 25—with acute alcoholism.

As regards ages, eleven of the fatal cases were five years old or under, eight were from five to twenty years, and one case (just mentioned) was over twenty.

The number of “return cases” was 24, or 3·6 per cent. of the patients discharged. This is counting all the cases occurring after the return home of a patient from hospital, and without any deductions.

DIPHTHERIA.

The number of cases of this disease admitted was 89, of which eight proved fatal. Three of the cases, however, including one of the fatal cases (No. 402), were found after admission not to be suffering from diphtheria, and correcting for these we have 86 cases with seven deaths, or a fatality of 8·1 per cent.

Operative Cases.—A number of cases were of the laryngeal type. Intubation had to be performed in 16 cases, 12 of which recovered. In three out of the four cases which succumbed tracheotomy was also performed as a last resort. Tracheotomy alone was performed in one case admitted *in extremis*, but without avail.

ENTERIC FEVER.

Forty-three supposed cases of this disease were admitted and four of them proved fatal, but nine of the cases, including three of the fatal cases, were found to be suffering from other diseases, and not from typhoid. This leaves, as the corrected number, 37

cases with only one death, a very favourable result. Typhoid fever is, notoriously, a very difficult disease to diagnose, and in many of the cases it is not possible to make a positive diagnosis until the patient has been under observation for a time. In one case, spasmodic laryngeal obstruction supervened, and tracheotomy had to be performed. The patient made a good recovery, but left hospital still wearing a tube. The causes of death in the three fatal cases which were found not to be typhoid were *meningitis*, *tubercular enteritis*, and *pneumonia*.

SMALLPOX.

Only 5 cases of this disease were admitted to the Smallpox Hospital: they were all importations from outside the Borough. They all made good recoveries.

THE USE OF ALCOHOL.

Our views as to the comparative inutility of alcohol as a therapeutic agent in the treatment of acute zymotic diseases remain unchanged.

During the year, alcohol was only twice prescribed for patients; both were seriously ill, and both died.

PHTHISIS.

157 cases of this disease were admitted and one died. The question of the value of admitting this disease to the Borough Hospital has been fully discussed in the text of the report, page 71.

THE HOSPITAL STAFF.

During the year, Dr. Allan Warner, who had been Resident Medical Officer at the Hospital for four years, resigned his post, having been appointed Medical Officer to the Education Authority. He left in October, much to the regret of the other members of the staff, by whom he was much esteemed. I was very sorry to lose his valuable assistance.

He was succeeded in November by Mr. John Lambie M.B., D.P.H., Resident Medical Officer at the Palmer Memorial Hospital, Jarrow-upon-Tyne.

At the close of 1904 the Matron, Miss Webb, who had been with us for nearly 2 years, resigned her post, having been appointed Matron at the new Sanatorium for Consumption at Frimley.*

She was succeeded early in 1905 by Miss M. Duffy, Assistant Matron at the Sheffield Fever Hospital.

Nurse Peacock, who had been on the staff for several years, and was an excellent nurse and a great favourite, left during the year to get married. There were the usual number of changes amongst the subordinate members of the staff.

HONORARY CHAPLAIN.

Canon Gedge has continued to act as Honorary Chaplain, and visits the Hospital regularly once a week, devoting a whole afternoon to this purpose. His visits are very greatly appreciated both by patients and staff.

THE LATE DR. VAUGHAN.

During the year the death occurred of Canon D. J. Vaughan, D.D., who acted as Honorary Chaplain to the Hospital for many years, and only relinquished the post when failing health and strength compelled him to do so. His work at the Hospital was entirely a labour of love. During the last smallpox epidemic he was a regular visitor to the Smallpox Hospital, and when a death occurred he usually officiated at the funeral, and in the open air, quite irrespective of the inclemency of the weather. It was a great privilege for the Hospital to have enjoyed the ministrations of such a truly "grand old man," and his memory will long be cherished with affectionate esteem.

* Unfortunately, almost immediately after entering upon her new sphere, her health broke down; she was very seriously ill for several months and had to resign her post in consequence. When I last heard from her she was better, and hoped soon to be able to resume work.

GIFTS TO THE HOSPITAL.

Name of Donor.	Nature of Gift.
Beck, Mrs.	Toys.
Bennett's, Market St. (per Miss Turner)	Christmas Cards.
Bonner, Mrs. George	Six Dressed Dolls.
Bradsworth, Miss	Parcel of "Sunbeams."
Brook, Mrs. (per Mrs. Headly)	Confectionery.
Davey, Mrs. and family	Dressed Dolls.
Desborough, Miss	Toys.
Gedge, Rev. Canon	Grapes, Books, Clothing, Toys, Tobacco.
Green, Rev.	Mattress.
Lennard, Mrs., and children	Toys.
Midland Educational Co., Ltd.	Toys, Games.
Mitchell, High Street	Toys, Games.
Tyler, Miss F.	Toys.
Vaughan, Rev. Canon	Magazines.
Williams, Mrs.	Child's Cot, Dressing Gown, etc.
Windley, Ald. T.	Magazines, etc.
All Saints Church	Flowers.
St. Augustine's Church	Flowers and Plants.
Anstey Adult School	Basket of Flowers.
Bazaar of St. John the Divine	Toy Engine (for children's ward).
St. Saviour's Bazaar	Dressed Doll.
Church of Holy Apostles	Flowers.
Free Library *	Magazines, Books.
Medway Street School, Girls, Stand. I	Dressed Xmas Tree and Toys.
Wyggeston High School for Girls	Toys and Books.

* We wish to take this opportunity of specially acknowledging our indebtedness to the Free Libraries Committee and the Chief Librarian for many gifts of literature.

GIFT OF GRAPHOPHONE.

One gift to the Hospital calls for special mention, viz., an excellent Columbia Graphophone, sent to the Hospital as a 1906 New Year's gift by Sir Tollemache Sinclair, Bart. The gift is the more noteworthy because a similar gift is being made, I believe, to almost all the large hospitals in the country. These "talking machines" have been so improved during recent years that they are now a real pleasure to listen to, and the possession of one by a hospital is capable of affording endless entertainment and pleasure to the inmates.

BACTERIOLOGICAL WORK.

During the year the bacteriological laboratory at the Hospital has been very useful for making or confirming clinical diagnoses in cases of suspected diphtheria, typhoid fever, and tuberculosis. A large number of specimens, as in previous years, have been examined at the request of medical men practising in the Borough.

The following table, which however does not include all the hospital specimens, shows the number of specimens examined and the result.

DISEASE.	Number of Specimens.	Positive,	Negative.
Diphtheria	38	26	12
Enteric (Widal Test) ...	38	17	21
Tuberculosis	69	45	24
Malignant Pustule ...	1	...	1
Total	146	88	58

TABLE A.
umber of Patients Admitted, Discharged, and Died during 1905.

DISEASE.	Remaining in Hospital Dec. 31st, 1904.	Admitted during 1905.	Discharged during 1905.	Died during 1905.	Remaining in Hospital Dec. 31st, 1905.
Scarlet Fever ...	74	739	661	20	132
Diphtheria ...	1	89	71	8	11
Enteric Fever ...	1	43	31	4	9
Phthisis ...	12	157	154	1	14
Smallpox ...	...	5	5	...	...
Other Diseases ...	...	4	4	...	...
Total ...	88	1037	926	33	166

TABLE B.

Number of Admissions of the different Diseases during the five years the New Hospital has been open.

DISEASE.	1901.	1902.	1903.*	1904.*	1905.
Scarlet Fever	491	588	130	239	739
Diphtheria	592	183	47	26	89
Enteric Fever	60	54	24	37	43
Phthisis ... ..	...	...	63	121	157
Other Diseases ... ..	...	...	3	7	4
Total (Groby Road Hospital)	1143	825	267	430	1032
+ Smallpox	4	18	388	293	5
Grand total	1147	843	655	723	1037

* Hospital closed for part of the year on account of Smallpox.

+ Smallpox cases are treated at the Smallpox Hospital, which is a quarter of a mile distant from the Groby Road Hospital, but is staffed and administered from the latter.

TABLE C.

GIVING BRIEF PARTICULARS OF THE

HOSPITAL CASES

WHICH PROVED FATAL DURING 1905.

TABLE C. FATAL CASES OCCURRING IN 1905.

DISEASE.	Registered Number.	Initials.	Age.	Sex.	Time in Hospital.	Remarks, Complications, &c.
Scarlet Fever	21	D. B.	5	F	2 days	A seven months' child. Ailing all her life.
"	131	A. M.	2	M	33 "	Tubercular Meningitis.
"	139	H. G.	6	M	4 "	Malignant type, subcutaneous hemorrhage.
"	146	R. A.	2	F	3 "	Septic case on admission.
"	159	B. Y.	6	F	3 "	Malignant type.
"	213	W. P.	5	F	3 "	Ailing all her life.
"	230	H. C.	4	M	3 "	Malignant type. Another child died at home.
"	292	H. H.	8	M	1 "	Very delirious.
"	456	D. T.	2	F	12 "	Anginous type. Otorrhea and rhinorrhea.
"	518	F. P.	5	F	6 "	
"	581	E. S.	19	F	5 "	Malignant type. Very delirious.
"	617	M. B.	2	F	2 "	Diphtheria bacillus found in throat.
"	681	H. H.	5	M	4 hours	Moribund on admission.
"	741	S. S.	5	M	9 days	Anginous type.
"	754	A. W.	8	M	12 "	Sontic. Very delirious.

"	"	...	764	W. C.	25	M	14 "	Alcoholic.
"	"	...	784	B. F.	6	F	13 "	Septic type.
"	"	...	859	W. M.	11	F	2 "	Admitted from Infirmary, suffering from chorea.
"	"	...	862	W. J.	18	M	2 "	Delirious and exhausted on admission.
Diphtheria	...	...	92	T. J.	4	M	9 "	Cardiac failure.
"	...	...	133	F. J.	2	F	1 "	Intubation, tracheotomy.
"	...	..	253	W. B.	6	F	2 "	Intubation, tracheotomy.
"	...	...	405	M. S.	1½	F	1 hour	Tracheotomy.
"	...	...	483	W. K.	8	M	23 days	Admitted with post-diphtheritic paralysis. Ill three weeks before admission.
"	...	...	593	G. B.	2	F	13 hours	Tracheotomy. Heart failure.
"	...	...	601	A. A.	4	M	20 mins.	Moribund on admission. Tracheotomy.
Enteric Fever	...	...	650	J. H.	34	M	3 days	Severe typhinitis.
Measles	...	...	402	L. M.	1½	F	6 "	Sent to Hospital as diphtheria.
Tubercular Enteritis	...	...	173	C. N.	22	F	9 "	" " " enteric fever.
Pneumonia	...	...	144	H. H.	16	M	2 "	" " " " "
Meningitis...	...	...	837	F. H.	10	M	3 "	" " " " "
Phthisis	...	...	60	S. A.	37	M	12 "	Corporation labourer. Admitted as a special case.

APPENDIX III.

PUBLIC ANALYST'S REPORT

FOR THE YEAR 1905.

TOWN HALL, LEICESTER,

*January 22nd, 1906.**To the Chairman and Members of the Sanitary Committee.*

Gentlemen,—My report for the year 1905 is as follows:—

The total number of samples purchased by your Inspectors under the Food and Drugs Acts, and submitted for analysis during the year, was 337. In addition, 65 samples not taken under the Food and Drugs Acts were analysed, making a total of 402. The nature of the articles analysed is shown in Table A.

Milk.—Of the 174 samples of milk taken under the Food and Drugs Acts, nine were certified as adulterated. In four of these cases prosecutions were authorised, and in the remainder the vendors were cautioned. The latter course is followed when the amount of adulteration is only very slight, or if there are exceptional circumstances tending to exonerate the vendor.

Of the cases in which a prosecution was authorised, one was withdrawn on the defendant proving that he had purchased under a warranty, and another was not proceeded with on account of the duplicate sample having been accidentally destroyed. Small fines were imposed in the remaining two cases.

Early in the year I carried out an investigation as to the composition of milk of individual cows in order to determine how far, under local conditions, the standard fixed by the Board of Agriculture might be regarded as a fair one.

For this purpose, 30 cows, in five different dairies, were milked in the presence of the Inspector, and at the completion of the milking process a sample of the milk was taken direct from the milk pail. A sample was taken from the same cow both morning and evening, and the interval since calving was also noted. It

was found (as is usually the case) that the milk taken at the afternoon milking was very much richer in fat than that milked in the morning. Also that the milk of different cows, though in the same stall and fed in the same way, often varied greatly in quality. It was found in the case of one or two individual cows that the milk, both as regards fatty and non-fatty solids, fell considerably below the Board of Agriculture's standard. But when the milk of several cows was mixed together, as would be the case in practice, then the average was always above the standard, and generally well above it. It might conceivably happen, no doubt, in the case of the owner of only a few cows, that several or all of the cows gave exceptionally poor milk, so that the mixed milk of the cow-shed fell below the standard. In such a case, in the event of a prosecution, the vendor would be able to clear himself by having the cows milked, and a sample taken in the presence of our Inspector. Hitherto, however, no such course has been asked for, and I have had no reason to think that there has been any occasion for it.

Butter.—Four samples of butter were certified as adulterated: three with foreign fat, being, in fact, margarine: and one with excess of water.

Although there is not very much butter sold which can be certified as adulterated, there is reason to fear that the trade of "faking" butter is on the increase. A few years ago a well-known firm in a large way of business began the practice of increasing the moisture in butter. The amount of this "water-logged" butter now being sold is very great, and the number of firms selling it is fast increasing. Provided a declaration is made at the time of sale as to the amount of moisture present, it has been decided, after much litigation, that no offence is committed. Printed wrappers are therefore used bearing the announcement that the butter is "milk-blended with the best full-cream milk," etc.

Provided that the public are aware of the fact that they are buying butter and water, and not butter only, there is nothing illegal in this practice, though it undoubtedly tells unfairly upon those who are trying to sell pure butter, and find themselves undersold. Far more objectionable is the practice of weighting butter with milk-solids obtained from separated milk. If certain

brands of butter, *e.g.*, colonial and Siberian butter, be chosen, in which the amount of water and curd is naturally low, it is possible to add a certain amount of water and milk-solids (curd) without fear of detection, so far as the existing methods of analysis are concerned. It is probable that some of this "faked" butter is imported, whilst large quantities are turned out at home. Colonial or Siberian butter is bought, worked-up, and re-made. It is said that the profits are high, ranging over 10s. per cwt. It is probable that special legislation will have to be passed to deal with the evil.

Beer.—In two of the samples of beer analysed the amount of chlorides was found to be rather high, viz.—70 grains per gallon, expressed as sodium chloride or common salt. Both samples, though taken from different public-houses, were supplied from the same brewery in Northampton. Although this amount of chloride was not in itself injurious, I thought it desirable to inquire as to the reason for its presence, and communicated with the firm of brewers in question. They requested their own analyst to reply to me, which he did. He stated that he quite admitted the amount of chloride present, and there was no reason therefore, to think that the beer had been tampered with after leaving the brewery; but he explained that the deep well waters used in Northampton for brewing purposes naturally contained very large quantities of sodium chloride and other salts of soda; that, moreover, in order to improve the value of the water for brewing purposes, a certain quantity of calcium salts, in the form of chloride, was added, which by double decomposition would form sodium chloride, and so increase the amount naturally present. This is a legitimate process, and is done by many brewers when the quality of their water calls for it. The Sanitary Committee were satisfied that no chloride of sodium had been fraudulently added to the beer, and, therefore, took no further steps.

The usual Tables, A and B, are appended.

Your obedient Servant,

C. KILLICK MILLARD, M.D., D.Sc.,

Public Analyst for the Borough under the
Food and Drugs Acts.

TABLE A.

SUMMARY showing Number of Samples Analysed during 1905.

Nature of Article.	Number of Samples taken.	Number found to be Adulterated.	Remarks.
Milk	174	9	4 prosecutions, 5 cautions.
Butter	83	5	2 prosecutions, 3 cautions.
Margarine ...	1	...	
Cheese	12	..	
Bread	12	...	
Flour	6	...	
Coffee	18	...	
Beer	6	...	
Spirits	10	...	
Mustard	4	...	
Drugs	11	...	
Total	337	14	

In addition to the above, 60 samples of milk taken direct from the cow, and 5 samples of water, have been analysed, making a total of 402.

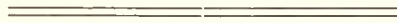
TABLE B. PARTICULARS OF ADULTERATED SAMPLES.

No. of Sample.	Nature of Sample.	Nature and Amount of Adulteration.	Remarks, Action Taken, &c.
20	New Milk	Deficient of 13% of fat ...	Prosecution authorised, but owing to circumstances was not carried out.
58	Butter (Price paid by Inspector 1/3 per lb.)	Contained 90% of foreign fat	Prosecution. Vendor charged under both Food and Drugs Acts and Margarine Act. Fined 40s. and costs on both charges.
126	New Milk	Deficient of 13% of fat ...	Prosecution. Warranty defence. Charge withdrawn on payment of costs.
104	New Milk	Deficient of 30% of fat ...	Prosecution. Defendant stated the wife (who sold the milk) had just had a bereavement. Bench took a lenient view of case under the circumstances. Fined 10s. and costs.
152	New Milk	Deficient of 40% of fat ...	Prosecution. Fined 10s. without costs.
160	New Milk	Deficient of 10% of fat ...	Vendor cautioned by Committee.
163	New Milk	Deficient of 10% of fat ...	Vendor cautioned by Committee.

TABLE B.—Continued.

No. of Sample.	Nature of Sample.	Nature and Amount of Adulteration.	Remarks, Action Taken, &c.
170	New Milk ...	Deficient of 10% of fat ...	Vendor cautioned by Committee.
185	Butter ...	90% of foreign fat ...	Prosecution. Vendor charged under Margarine Act. Fined £1 and costs.
258	Butter ...	90% of foreign fat ..	Vendor (small shopkeeper) cautioned by Sanitary Committee.
261	Butter ..	Sample contained 26% water	This was a sample of Peark's "Milk Blended" butter, sold without special label or declaration. Vendor cautioned.
264	Butter ...	90% of foreign fat ...	Vendor cautioned by Sanitary Committee.
316	New Milk ...	70% of added water	This sample was purchased in a small refreshment room as two tumblers of milk. Vendor who stated that the milk was intended for puddings was cautioned by Sanitary Committee.
326	New Milk ...	Deficient of 8% of fat ...	Cautioned by Sanitary Committee.

MORTALITY TABLE.



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CLASSIFICATION OF DEATHS IN 1905

ACCORDING TO CAUSE.

MORTALITY TABLE.

Deaths in the Borough of Leicester during the 52 Weeks ending December 31st, 1905

	0 to 1		1 to 5		Under 5		5 to 20		20 to 40		40 to 60		60 to 80		80 and upwards.		Over 5		All Ages.		Total.
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
CLASS 1.																					
SPECIFIC FEBRILE OR ZYMOTIC DISEASES.																					
1.—Miasmatic Diseases.																					
Small-pox	Vaccinated																				
	Unvaccinated																				
	Not known																				
	Not stated																				
Measles	12	4	18	19	30	23															53
Scarlet Fever	1	2	3	9	4	11	9	11	1												36
Diphtheria		1	3	4	3	5	1	2													11
Whooping Cough		11	10	5	24	16	34														50
Typhus Fever																					
Enteric or Typhoid Fever							3	1	3	2											9
Simple Continued Fever																					
Other Miasmatic Diseases												1					2				2
2.—Diarrhoeal Diseases.																					
Dysentery									1								1				1
Diarrhoea	112	74	12	7	124	81					1	1		4			1	5	125	86	211
Cholera																					
3.—Malarial Diseases.																					
Ague																					
Remittent Fever																					
4.—Zoogenous Diseases.																					
Cowpox, and Effects of Vaccination																					
Hydrophobia																					
Glanders																					
Splenic Fever																					

DEATHS—continued.

	0 to 1		1 to 5		Under 5		5 to 20		20 to 40		40 to 60		60 to 80		80 and upwards.		Over 5		All Ages		Total.
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Typhoid Mesenterica	6	2	2	...	8	2	...	...	...	...	...	...	...	...	...	...	153	123	8	2	10
Phthisis	3	4	4	1	7	5	15	23	74	60	54	29	10	11	...	...	9	14	160	128	288
Hydrocephalus and Tubercular Meningitis	7	5	19	9	26	14	7	12	1	1	1	1	...	...	...	...	2	4	35	28	63
Other forms of Tuberculosis	4	...	2	2	6	2	...	...	1	1	1	2	...	...	...	...	...	...	8	6	14
Scrofula ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anæmia, Chlorosis, Leucocythæmia ... ..	...	...	...	...	...	...	2	1	2	1	3	3	2	1	...	...	4	8	4	8	12
Diabetes ... ..	...	...	...	...	...	...	1	...	1	3	3	4	4	6	1	...	9	14	9	14	23
Other Constitutional Diseases ... ..	...	...	...	...	...	...	1	...	1	1	1	...	2	1	...	...	4	2	4	2	6
Class V.	28	17	31	15	59	32	26	39	81	75	85	95	60	67	5	6	257	282	316	314	630
LOCAL DISEASES.																					
1.—Diseases of Nervous System.																					
Inflammation of Brain or Membranes ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Apoplexy, Softening of Brain, Paralysis ... ..	...	...	...	...	...	...	...	...	3	4	19	31	41	50	6	11	69	96	60	96	165
Insanity, General Paralysis of Insane ... ..	...	...	...	...	...	...	1	1	2	2	3	1	...	...	...	...	5	4	5	4	9
Chorea ... ..	...	...	...	...	...	...	1	1	...	...	...	...	1	...	...	...	1	2	1	2	3
Epilepsy ... ..	...	...	...	...	...	...	...	...	6	...	2	4	...	...	...	...	8	4	8	4	12
Convulsions ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	47	42	89
Laryngismus Stridulus	42	37	5	5	47	42	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Disease of Spinal Cord, Paraplegia, Paralysis ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Agitans ... ..	...	...	...	...	...	...	1	3	...	...	2	2	4	1	...	...	9	4	9	4	13
Other Diseases of Nervous System ... ..	...	...	...	...	...	...	...	...	1	1	2	...	1	...	...	...	4	1	4	1	5
2.—Diseases of Organs of Circulation.																					
Pericarditis and Endocarditis ... ..	...	...	...	2	...	2	2	4	...	4	...	2	1	1	...	...	3	11	3	13	16
Heart Disease	11	4	...	1	11	5	6	6	25	20	50	44	59	76	7	4	147	150	138	155	313
Anæurism ... ..	...	...	...	...	...	...	...	...	1	...	4	...	...	...	...	...	...	1	...	...	6
Embolism, Thrombosis ... ..	...	...	...	...	...	...	...	...	...	...	1	...	2	3	...	...	3	3	3	3	9
Other Diseases of Blood Vessels ... ..	...	...	...	...	...	...	1	...	3	...	...	1	1	...	...	...	...	1	...	...	6

DEATHS—continued.

	0 to 1		1 to 5		Under 5		5 to 20		20 to 40		40 to 60		60 to 80		80 and upwards.		Over 5		All Ages.		Total.	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F		
(b) OF PARTURITION.																						
Abortion, Miscarriage ...									1		1						2		2		2	
Puerperal Convulsions ...																						
Placenta Previa, Flooding ...									15		2		1				1		1		1	
Other Accidents of Childbirth ...												2					17		17		17	
7.—Diseases of Integumentary System.																						
Phlegmon ...									2		1		1				2		2		5	
Ulcer, Carbuncle ...																						
Other Diseases of Skin, &c. ...																						
8.—Diseases of Bones and Joints.																						
Caries and Necrosis ...									1									1		1	1	
Arthritis, Osteitis, Periostitis ...							1	1				1	2				2	4	2	4	6	
Other Diseases of Bones and Joints ...				1		1			2		2						2	2	2	3	5	
9.—Diseases of Organs of Special Sense.																						
Ear, Eye, Nose ...																						
10.—Diseases of Lymphatic System, &c.																						
Lymphatics and Spleen ...									1		1						1		1		2	
Bronchocele, Addison's Disease ...																						
Quinsy ...																						
	133	104	43	63	176	167	25	34	76	74	143	133	205	225	18	30	467	496	643	603	1,304	

CLASS VI.

DEVELOPMENTAL DISEASES.

Premature Birth
 Atelectasis
 Congenital Malformations
 Teething
 Atrophy, Inanition, Debility
 Old Age

79 68
 4 3
 3 3 2 3 5
 93 71 2 1 95

68
 3
 6
 72

79 68
 4 3
 1
 5 6
 98 75
 114 133

79 68
 4 3
 1
 5 6
 98 75
 114 133

CLASS VII.

DEATHS FROM VIOLENCE.

1.—Accident or Negligence.

Fracture and Contusions
 Gunshot Wounds
 Cut, Stab
 Burns and Scalds
 Poison
 Drowning
 Suffocation
 Otherwise

79 68
 4 3
 3 3 2 3 5
 93 71 2 1 95

68
 3
 6
 72

79 68
 4 3
 1
 5 6
 98 75
 114 133

79 68
 4 3
 1
 5 6
 98 75
 114 133

2.—Homicide.

Manslaughter
 Murder

79 68
 4 3
 3 3 2 3 5
 93 71 2 1 95

68
 3
 6
 72

79 68
 4 3
 1
 5 6
 98 75
 114 133

79 68
 4 3
 1
 5 6
 98 75
 114 133

Suicide

7 7 5 8 12 15 8 6 1 4 2 2 6 1 2 3 33 24 45 39 84

79 68
 4 3
 3 3 2 3 5
 93 71 2 1 95

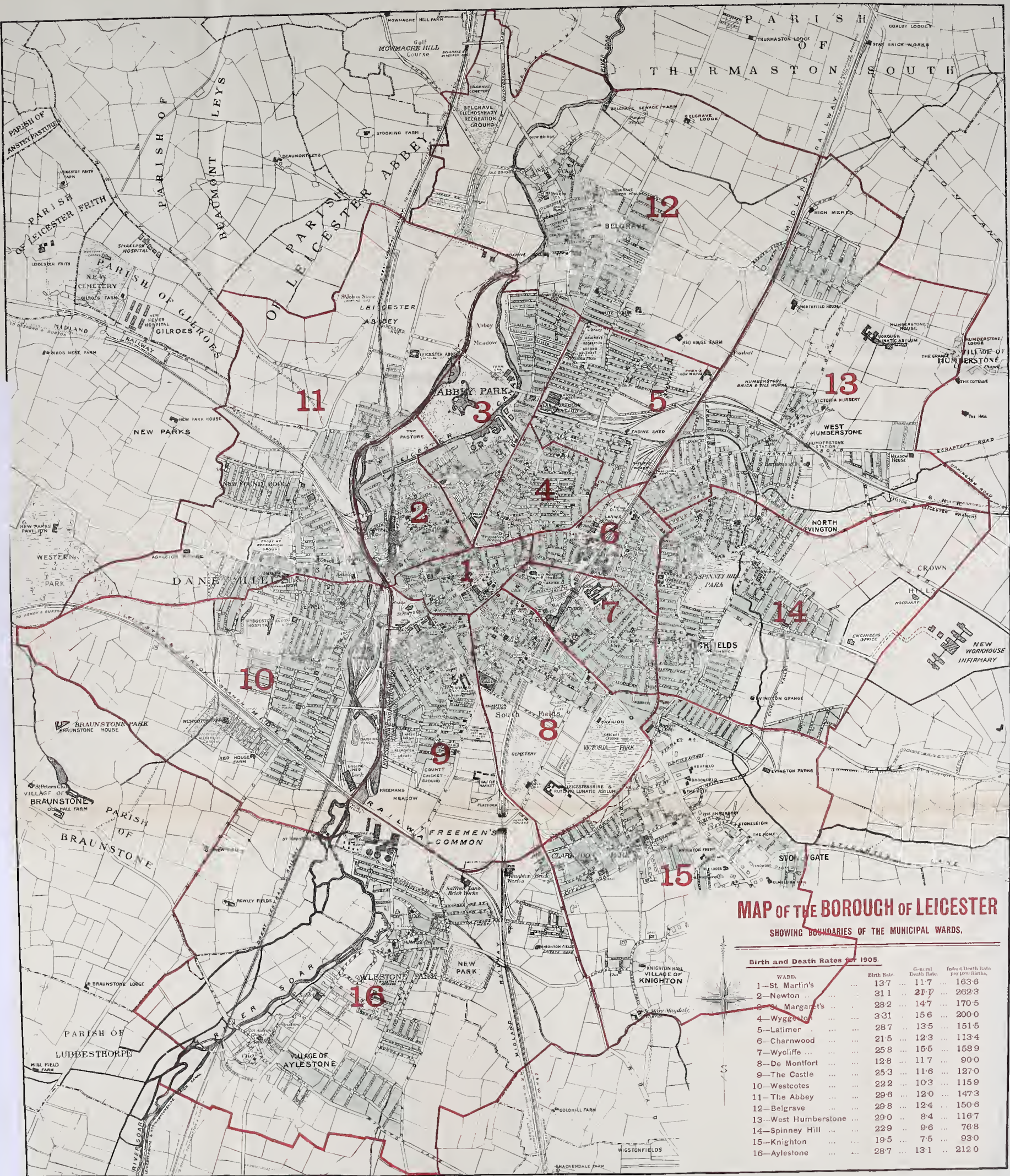
68
 3
 6
 72

79 68
 4 3
 1
 5 6
 98 75
 114 133

79 68
 4 3
 1
 5 6
 98 75
 114 133

DEATHS—continued.

Class VIII.																						
DEATHS FROM ILL-DEFINED AND NOT SPECIFIED CAUSES.																						
(e.g., Dropsy, Abscess, Tumour, Haemorrhage, Mortification, Death from Natural Causes, &c.)																						
Class	I to 1	1 to 5	Under 5	5 to 20	20 to 40	40 to 60	60 to 80	80 and upwards	Over 5		All Ages		Total									
	M	F	M	F	M	F	M	F	M	F	M	F										
I.—Zymotic Diseases	140	95	42	64	182	159	14	14	5	10	6	1	3	4	.....	1	28	29	210	188	598
II.—Parasitic Diseases	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
III.—Dietic Diseases	.....	1	.....	.....	.....	.....	.....	.....	1	1	4	2	.....	.....	.....	.....	5	3	5	4	9
IV.—Constitutional Diseases	28	17	31	15	59	32	26	39	81	75	85	95	60	67	5	6	257	282	516	314	630	
V.—Local Diseases	133	104	43	63	176	167	25	34	76	74	143	133	205	225	18	30	467	496	643	663	1300	
VI.—Developmental Diseases	179	145	4	4	183	149	1	.....	.....	.....	2	2	58	69	57	65	118	136	301	285	586
VII.—Violent Deaths	7	7	5	8	12	15	8	6	8	3	9	11	6	1	2	3	33	24	45	39	84	
VIII.—Ill-Defined, &c.	7	.....	2	3	9	3	3	1	3	9	.....	7	5	5	1	2	12	24	21	27	43
Total	494	369	127	158	621	527	77	94	174	172	249	251	337	371	83	106	620	694	1541	1521	3062	



MAP OF THE BOROUGH OF LEICESTER
SHOWING BOUNDARIES OF THE MUNICIPAL WARDS.

Birth and Death Rates for 1905.			
WARD.	Birth Rate.	General Death Rate.	Infant Death Rate per 100 Births.
1—St. Martin's	137	11.7	163.6
2—Newton	31.1	21.7	262.3
3—St. Margaret's	282	14.7	170.5
4—Wyggeston	331	15.6	200.0
5—Latimer	287	13.5	151.5
6—Charnwood	215	12.3	113.4
7—Wycliffe	258	15.5	158.9
8—De Montfort	128	11.7	90.0
9—The Castle	253	11.6	127.0
10—Westcotes	222	10.3	115.9
11—The Abbey	296	12.0	147.3
12—Belgrave	298	12.4	150.6
13—West Humberstone	290	8.4	116.7
14—Spinney Hill	229	9.6	76.8
15—Knighton	195	7.5	93.0
16—Aylestone	287	13.1	212.0

